

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of	)	
	)	
EchoStar Satellite Corporation	)	
and Hughes Electronics Corporation	)	CS Docket No. 01-348
	)	File No. SAT-LOA-20020225-00023
	)	S2435
	)	
for Authority to Launch and Operate	)	
NEW ECHOSTAR 1 (USABBS-16)	)	

**JOINT OPPOSITION AND REPLY COMMENTS**

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**JOINT OPPOSITION AND REPLY COMMENTS**

EchoStar Satellite Corporation (“EchoStar”) and Hughes Electronics Corporation (“Hughes,” and together with EchoStar, the “Applicants”) hereby oppose and offer reply comments to the Petition to Dismiss of the National Rural Telecommunications Cooperative (“NRTC Petition”), the Petition to Deny and Motion to Dismiss filed by the National Council of La Raza (“La Raza Petition”), and the Comments of SES Americom, Inc. (“SES Comments”) (collectively, the “Petitions”) filed in connection with the above-captioned satellite application (the “Application”).<sup>1</sup> The Petitions fail to demonstrate that an unconditional grant of the Application would be *prima facie* inconsistent with the public interest and the relief requested therein should be summarily rejected.<sup>2</sup> As the Applicants have shown and reiterate below, grant of the Application is manifestly in the public interest.

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<sup>1</sup> See Public Notice, “EchoStar Communications Corporation and Hughes Electronics Corporation Seek FCC Authority to Launch and Operate NEW ECHOSTAR 1 DBS Satellite,” DA 02-922 (rel. April 19, 2001).

<sup>2</sup> See 47 C.F.R. §25.154(a)(4) (Petitions must “[c]ontain specific allegations of fact . . . to support the specific relief requested which shall be supported by affidavit . . . and which

## I. SUMMARY AND INTRODUCTION

In connection with the pending merger of EchoStar's parent corporation, EchoStar Communications Corporation ("ECC"), and Hughes,<sup>3</sup> the Application seeks authority to launch and operate a new state-of-the-art, spot-beam direct broadcast satellite, NEW ECHOSTAR 1, at the 110° W.L. orbital location.<sup>4</sup> Together with the other satellites operated or proposed by the Applicants, NEW ECHOSTAR 1 will help usher in one of the most dramatic of the many public interest benefits that will flow directly from the ECC-Hughes merger -- consumers across the United States will have access to local broadcast channels with digital-quality television pictures and CD-quality sound in *every one of the 210 Designated Market Areas ("DMAs") covering the country*.

Significantly, none of the Petitions disputes the tremendous benefits to competition and consumers that will flow from such a dramatic expansion of satellite-delivered local broadcast television signals. Instead, the Petitions either challenge the merger-specificity of these benefits or argue that special conditions should be placed upon the approval of the Application or the New EchoStar Transfer Application. As set forth below, none of these positions has any merit.

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shall be sufficient to demonstrate . . . that a grant of, or other Commission action regarding, the application would be *prima facie* inconsistent with the public interest.")

<sup>3</sup> By a separate application, ECC and Hughes have proposed to transfer control of their authorizations to Hughes, which will have a new ownership structure and will be renamed EchoStar Communications Corporation ("New EchoStar"). See Consolidated Application of EchoStar Communications Corporation, General Motors Corporation, Hughes Electronics Corporation for Authority to Transfer Control, CS Docket No. 01-348 (filed Dec. 3, 2001) ("New EchoStar Transfer Application").

<sup>4</sup> NEW ECHOSTAR 1 is a temporary name for what will become the fifth spot-beam satellite and the sixteenth overall satellite in the merged company's fleet.

## **II. THE BENEFITS OF THE “LOCAL CHANNELS, ALL AMERICANS” PLAN HAVE NOT BEEN SERIOUSLY DISPUTED**

None of the Petitions disputes the substantial public interest benefits of the “Local Channels, All Americans” plan that will be enabled by the launch and operation of the proposed NEW ECHOSTAR 1 spot-beam satellite. The Application presents a technically and commercially feasible plan to combine and integrate this spacecraft with the other satellite and spectrum assets of the merged company at all three DBS CONUS orbital locations in order to serve all 210 DMAs in the United States, including those in Alaska and Hawaii, and including full compliance with prevailing must carry requirements.

As described in the Application, the Applicants have designed a system that enables the reception of local channels, other entertainment services and high-speed Internet access using a single, consumer-friendly small dish antenna. That 18 x 22-inch satellite dish will enable the reception of both entertainment and Internet access services from the merged company’s multiple orbital locations. New EchoStar will deploy new set-top boxes and satellite dishes free of charge to all existing DIRECTV and DISH Network subscribers who may need them in order to receive their local channels. Consumers across the country will pay the same price for this DBS service, *i.e., one nation, one rate card*, regardless of a subscriber’s location. Implementation of this plan will begin immediately upon regulatory approval of the merger and this Application, with the rollout being completed as soon as 24 months thereafter.

As further recounted in the Application, the “Local Channels, All Americans” plan enabled by the addition of the NEW ECHOSTAR 1 satellite to the merged company’s satellite fleet will have tremendous public interest benefits. These include:

- *Providing Local Channel Service in Every DMA, Including Rural Areas --*

At least 42 million television households are now not served with satellite-delivered local channels, meaning that consumers are forced either to pay additional fees to subscribe to basic cable service in order to receive local channels, or to install an off-air rooftop antenna and hope for good reception. The addition of NEW ECHOSTAR 1 to the merged company's satellite fleet will remedy this fundamental problem.

- *Providing Benefits to Local Broadcasters --*

Television broadcasters will benefit from the launch and operation of NEW ECHOSTAR 1 because its addition to the merged company's satellite assets will ensure that local stations will be carried in all 210 DMAs, and in many cases, enable the reception of local broadcast programming by households located in remote areas that cannot receive video programming from any source at all other than via satellite.

- *Enhancing DBS Competition to Incumbent Cable Operators --*

By offering attractive programming packages that include local broadcast offerings to all consumers at competitive prices set on a uniform nationwide basis, New EchoStar will continue to drive the evolution of DBS as the most formidable competitor to incumbent cable operators. As cable systems continue to "go digital" to compete with the product features that DBS operators have already brought to the MVPD marketplace, New EchoStar will compete aggressively with the cable incumbents and drive them to improve their own products, pricing, and service quality. The launch and operation of NEW ECHOSTAR 1 is necessary to achieve this goal.

- *Continuing Satellite Innovation and Improving Spectrum Efficiency --*

The state-of-the-art NEW ECHOSTAR 1 satellite, which will employ spot-beam technology, is designed to provide expanded capacity for New EchoStar's DBS system on a spectrally efficient basis. Moreover, new consumer receiving equipment will be deployed that will allow consumers to receive satellite signals from multiple orbital positions with a single 18 x 22-inch mini-dish. This continuing evolution of satellite distribution technology will benefit all Americans.

### **III. ACHIEVEMENT OF THE "LOCAL CHANNELS, ALL AMERICANS" PLAN BY THE APPLICANTS IS ONLY POSSIBLE WITH THE MERGER**

The addition of NEW ECHOSTAR 1 to New EchoStar's existing and planned constellation of DBS satellites will provide the necessary additional satellite capacity to implement the "Local Channels, All Americans" plan in a technically feasible and commercially viable manner. The Applicants have shown that their "Local Channels, All Americans" plan can only be achieved if the New EchoStar Transfer Application is approved because the merged company will be able to:

- end inefficient use of the DBS spectrum by eliminating the need for DIRECTV and EchoStar to transmit more than 500 channels of duplicative programming;
- combine and rationalize each company's spectrum and advanced satellite assets in a way that makes the plan technically feasible; and
- combine the companies' subscriber bases to make it commercially feasible to serve smaller markets, to change out subscriber equipment, and to construct and launch the additional satellite capacity that is necessary to implement the plan.

In response to this Application, the NRTC has chosen to file a perfunctory Petition to Dismiss primarily as a vehicle to attach its prior pleadings in the merger proceeding, and to repackage its earlier argument that the Applicants "do not need to launch New EchoStar I

in order to provide local service to all 210 DMAs.”<sup>5</sup> The Applicants have already pointed out the numerous flaws in the NRTC’s (and its technical consultant’s) position regarding the alleged ability of either DIRECTV or EchoStar, on a standalone basis, to offer satellite-delivered local broadcast channels to more than a limited number of DMAs.<sup>6</sup> Only the merger will rationalize the available DBS spectrum and provide the capacity, scale and subscriber base necessary to achieve full local channel service coverage of every DMA in the United States.

Specifically, Applicants have shown that the NRTC has based its position on erroneous technical assumptions and wholly unrealistic satellite design parameters that would require unacceptable quality sacrifices and the acceptance of huge technical and schedule risk by either DBS operator.<sup>7</sup> And equally important, the NRTC disregards completely the commercial feasibility of each DBS provider serving all 210 DMAs with a limited number of DBS frequencies. For example, while the NRTC blithely asserts that each company can simply use its current satellite assets “more efficiently and launch[] one additional satellite each,”<sup>8</sup> the NRTC does not explain how either DIRECTV or EchoStar could economically justify spending an additional \$300 million apiece for a new spot-beam satellite without increasing the number of available DBS frequencies. Such a system would entail huge concomitant sacrifices in each provider’s ability to offer its subscribers national, cable-competitive programming choices, in

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<sup>5</sup> NRTC Petition at 3.

<sup>6</sup> See Hughes and EchoStar, Opposition to Petitions to Deny (Feb. 25, 2002) (the “Opposition”), at Attachment B (Declaration of Dr. Richard J. Barnett), at ¶¶ 45-72; *id.*, Attachment A (Declaration of Dr. Robert D. Willig), at ¶¶ 9-17.

<sup>7</sup> See Opposition at 6-20; *id.*, Attachment B (Declaration of Dr. Richard J. Barnett), at ¶¶ 9-15, 19-21, 23, 28-29, 37, 41-50, 67-72; see also *id.*, Attachment A (Declaration of Dr. Robert D. Willig), at ¶¶ 14-17.

<sup>8</sup> NRTC Petition at 4 (citing Morgan declarations).



exchange for offering satellite-delivered local channels in a number of smaller, less populated DMAs.

The simple truth is that to take on the expense and risk of constructing and launching new spot-beam satellites under the current regulatory structure of fragmented DBS spectrum merely to serve smaller DMAs with satellite-delivered local channels does not make economic sense. Nothing short of the proposed merger will enable the Applicants to provide all Americans with their local stations by satellite. Neither company alone has sufficient satellite capacity to dedicate any more of its limited spectrum resources to the expansion of local channel services, and neither company alone could afford to do it.

Virtually the only new assertion made by NRTC in its Petition has to do with EchoStar's recent application seeking authority to use the expansion DBS band. According to NRTC, that application somehow "proves" that EchoStar can afford to launch another spot-beam satellite to provide local broadcast channels in every DMA. NRTC's affiliate Pegasus and DIRECTV have filed similar applications for use of the expansion DBS band. NRTC's apparent complaint is that there is some inconsistency between Dr. Willig's earlier testimony and EchoStar's expansion DBS band application:

At the same time [EchoStar's] economist, Dr. Robert Willig, was opining about the cost-prohibitive nature of a \$220-\$300 million investment in a DBS spot beam satellite that he said neither company could afford to pay standing alone, EchoStar was asking the Commission for authority to launch and operate three new satellites for a yet-to-be established service at a potential cost of more than one billion dollars.<sup>9</sup>

First, NRTC mischaracterizes Professor Willig's testimony. Professor Willig was not testifying that EchoStar or DIRECTV cannot afford to pay for another satellite. Rather, he was making the commonsense point that, in deciding whether to build a satellite, each company

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<sup>9</sup> NRTC Petition at 5 (footnote omitted).

would weigh the expected benefits against the expected costs, and would not build the satellite if the costs exceeded the benefits.

Second, NRTC mischaracterizes the import of EchoStar's proposal for an expansion DBS system. This proposal does not amount to a guarantee that such a system will be built. In fact, it is by no means certain today that the expansion DBS band will be an economic or viable alternative for expanding DBS services. This uncertainty is a function of several factors, including the fact that any opportunity to use the band is at least five years out since this spectrum does not become available until April 2007. As EchoStar explained in its expansion band application:

While the extent to which the DBS Expansion Band can be fully integrated with EchoStar's existing DBS services remains uncertain at this time, this spectrum presents the potential for such integrated services starting in 2007.<sup>10</sup>

The expansion DBS spectrum is simply not a reliable strategy for expanding the capacity of DBS networks at this time. By April 2007, without the merger, the battle with digital cable systems may well have been lost, and it is no surprise that this kind of time horizon has little or no relevance to any proper analysis of the competitive landscape.<sup>11</sup> Moreover, expansion DBS spectrum is in higher frequency bands than current DBS services, and the spectrum remains untested for satellite video service given its propagation characteristics. In fact, the band may prove to be more viable for new entrants that do not have to tackle issues of interoperability with legacy DBS systems. In any event, the Commission has not even promulgated licensing or service rules for this band. In sum, while the applications by EchoStar, Pegasus and DIRECTV

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<sup>10</sup> See EchoStar DBS Expansion Band Application at 2.

<sup>11</sup> U.S. Department of Justice and Federal Trade Commission, 1992 Horizontal Merger Guidelines (rev. April 1997) §3.2 (only those competitive alternatives that can be achieved within two years are considered in the competitive effects analysis).

were necessary to preserve U.S. companies' opportunity to use that spectrum in the future, these proposed systems are far from a certainty in light of all these contingencies.

**IV. NEW ECHOSTAR WILL COMPLY FULLY WITH PREVAILING MUST CARRY OBLIGATIONS AND WILL PROVIDE LOCAL BROADCAST CHANNELS TO ALL 210 DMAs**

NRTC also suggests that Applicants' commitment to deploy the NEW ECHOSTAR 1 satellite to allow New EchoStar to provide local broadcast channels to all 210 DMAs "cannot be deemed a benefit of the Merger" because EchoStar has challenged the constitutionality of the Satellite Home Viewer Improvement Act's ("SHVIA") must-carry requirements.<sup>12</sup> However, the pending constitutional challenge to must-carry in no way undermines the Applicants' commitment to expand local broadcast service to all 210 DMAs.

As EchoStar's Chairman and CEO, Charles Ergen, explained at a March 6, 2002 U.S. Senate Committee on the Judiciary, Subcommittee on Antitrust, Competition, and Business and Consumer Rights hearing concerning the proposed merger and EchoStar's must-carry legal challenge:

First of all, we will comply with must-carry on a single dish and carry all stations in all markets. Having said that, we believe the principle of must-carry may have some constitutional questions [in] terms of freedom of speech and we believe that that principle should at least be pursued in the courts. That's why we have, obviously have, courts.<sup>13</sup>

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<sup>12</sup> See NRTC Petition at 5-6.

<sup>13</sup> See Testimony of Charles W. Ergen before the Senate Judiciary Committee, March 6, 2002, ("*Judiciary Testimony*").

Accordingly, because EchoStar believes that there are significant First Amendment issues associated with SHVIA's must-carry requirements, it has filed a petition for writ of certiorari with the U.S. Supreme Court.<sup>14</sup>

The Applicants' "Local Channels, All Americans" plan has never changed, however. Whatever the fate of must-carry, New EchoStar will provide local broadcast channels in all 210 DMAs by using the NEW ECHOSTAR 1 satellite to supplement the local programming coverage provided by the Applicants' existing and planned DBS satellites. This "Local Channels, All Americans" service vision, however, is premised entirely upon the EchoStar-Hughes merger being successfully consummated. As explained above, absent the merger, neither DIRECTV nor EchoStar has the satellite/spectrum capacity or subscriber base, especially in the presence of must-carry obligations, to carry local channels in anything close to the 210 DMAs in the United States.

To be clear -- if must-carry remains the law, as it is today, New EchoStar will carry all stations that qualify for carriage. If must-carry is overturned, New EchoStar still intends to carry all local channels with meaningful local content in all 210 DMAs. In addition, EchoStar has already offered to any broadcaster with meaningful local content the opportunity to enter into a fully binding retransmission consent agreement, contingent upon the merger and effective when New EchoStar commences local broadcast carriage in that broadcaster's DMA. This means that, even if must-carry is overturned, EchoStar would be contractually bound to carry all of the stations with which it has entered such an agreement.

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<sup>14</sup> See Satellite Broadcasting and Communications Association, et. al., Petition for Writ of Certiorari, *Satellite Broadcasting and Communications Association v. FCC*, 70 U.S.L.W. 3580 (U.S., Mar. 7, 2002).

**V. SES HAS NO STANDING TO COMPLAIN ABOUT POTENTIAL INTERFERENCE FROM NEW ECHOSTAR 1 AND ITS “OPEN ACCESS” PROPOSAL SHOULD BE REJECTED**

SES does not seriously challenge New EchoStar’s application to launch a spot-beam satellite at the 110° W.L. orbital location. Instead, SES has used its Comments in this proceeding to promote its recently-filed petition for declaratory ruling to offer satellite capacity to third parties in order to provide direct-to-home services to consumers over a foreign-licensed DBS satellite that it wants to operate at 105.5° W.L.<sup>15</sup> The Applicants welcome competition and entry into the U.S. MVPD market. The Applicants are currently examining the technical issues associated with SES’s request for a new DBS slot between 101° W.L. and 110° W.L. and will express their preliminary views in due course in the pleading cycle opened by the Commission regarding SES’s proposal.<sup>16</sup> Under the Commission’s Rules and precedent, however, the licensing proceeding for a satellite that would operate at an existing DBS slot already licensed to the Applicants for a high-power satellite is a completely inappropriate forum for SES to request a sharing demonstration.

With respect to SES’s Comments in this proceeding, there can be no serious question as to the technical qualifications of New EchoStar, in light of the number of DBS and FSS satellites that both EchoStar and Hughes have successfully launched and operated in the United States and around the world. Nor have the Applicants failed to provide the Commission with any data or analysis required by the Rules or otherwise needed to assess its technical qualifications. The SES satellite filing that is the subject of its petition for declaratory ruling is not entitled to any interference protection under the FCC’s Rules and DBS policies. Lastly, there

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<sup>15</sup> See *Petition for Declaratory Ruling in the Matter of SES Americom, Inc.*, File No. SAT-PDR-20020425-00071 (filed April 25, 2002).

<sup>16</sup> See *Public Notice, Satellite Policy Branch Information, Satellite Space Applications Accepted for Filing*, Report No. SAT-00110 (rel. May 17, 2002).

is no basis for the Commission to accept SES's flawed "open access" proposal as a condition of granting the New EchoStar Transfer Application.

**A. The Applicants Are Technically Qualified to Construct, Launch and Operate NEW ECHOSTAR 1**

In the guise of challenging New EchoStar's technical qualifications, SES asserts that the Application is deficient because it fails to include allegedly required interference analyses of the proposed system with respect to other DBS systems and co-frequency radiocommunication systems, including SES's recently proposed satellite at 105.5° W.L. A simple reading of the FCC's Rules, however, reveals that the Applicants have complied fully with the informational and technical requirements contained therein for new DBS satellite applications. SES further ignores the fact that unless and until the FCC grants SES's petition and allows it to serve the U.S. DBS market from a proposed foreign-licensed satellite, its petition has absolutely no status at the FCC for purposes of conducting interference analyses. Even if the Commission were to approve SES's petition, its DBS satellite would not be entitled to any protection from interference caused by any other DBS satellites operating in any U.S. assigned DBS orbital location unless and until the Region 2 BSS Plan were modified to include the parameters and orbital location of the SES modification. Thus, the relative ITU "priority" of SES's satellite vis-à-vis other U.S. DBS satellites is irrelevant to the consideration of the Application.

There can be no serious question that the Applicants are fully qualified – legally, financially, technically, and otherwise – to construct, launch and operate NEW ECHOSTAR 1. Both EchoStar and Hughes have been in the DBS business for the better of ten years and each currently supports a fleet of DBS satellites located in a number of U.S. assigned DBS orbital locations. They each also know how to manage a DBS business with EchoStar currently serving

over 7 million subscribers and Hughes serving more than 10.5 million subscribers in the U.S. alone. Hughes also has a long history of satellite operations in the FSS, with a number of satellites serving domestic and international customers. Thus, to imply as SES does, that that the Applicants may not be technically qualified to operate NEW ECHOSTAR 1 is absurd.

SES's fundamental complaint is that the Application does not contain any interference analyses demonstrating that the proposed satellite can share with SES's recently announced DBS satellite – AMERICOM2HOME – at 105.5° W.L., which SES claims has ITU “priority” over NEW ECHOSTAR 1. Contrary to SES's assertion, the Commission's Rules do not require that such information be included in a DBS application. Indeed, the only section of the Rules referenced by SES – Section 100.21-Technical requirements – states as follows:

Prior to the 1983 Regional Administrative Radio Conference for the Broadcasting-Satellite Service, interim direct broadcast satellite systems shall be operated in accordance with the sharing criteria and technical characteristics contained in Annexes 8 and 9 of the Final Acts of the World Administrative Radio Conference for the Planning of the Broadcasting-Satellite Service in Frequency Bands 11.7-12.2 GHz (in Regions 2 and 3) and 11.7-12.5 GHz (in Region 1), Geneva, 1977; Provided, however, that upon adequate showing systems may be implemented that use values for the technical characteristics different from those specified in the Final Acts if such action does not result in interference to other operational or planned systems in excess of that determined in accordance with Annex 9 of the Final Acts.<sup>17</sup>

The phrase “to operational or planned systems” limits the interference concerns contemplated by the rule to, at most, systems that are either operational or incorporated in the ITU Region 2 BSS Plan.<sup>18</sup> Thus, it is simply incorrect to assert, as SES has in its Comments, that this rule requires

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<sup>17</sup> See 47 C.F.R. §100.21.

<sup>18</sup> The only reasonable interpretation of “planned” in this rule is to give it the same meaning as the word “planning” in the caption of the 1977 Final Acts cited a few lines above – they are both references to the Region 2 BSS Allotment plan. Any other reading would be patently absurd. Otherwise, anyone with a “plan,” no matter how inchoate or non-compliant, would be able to require an applicant for a U.S. DBS slot to make a showing of no interference to that plan.

“that an analysis be performed with respect to sharing criteria in Annex 1 of Appendices 30 and 30A of the ITU Radio Regulations in order to determine if the services of other Administrations, or other U.S. systems, are affected by the proposed system.”<sup>19</sup>

Any technical demonstration required under Section 100.21 of the Rules is analogous to the interference showing of compliance with two-degree spacing that the Commission requires of FSS satellite applicants.<sup>20</sup> Under that rule, an FSS satellite applicant must submit “[a]n interference analysis to demonstrate the compatibility of its proposed system 2 degrees from any authorized space station.” U.S. FSS applicants thus do not have to make any showing of no interference to foreign ITU filings for orbital locations less than two degrees away. SES essentially seeks for its non-conforming filing in a planned band, which proposes 4.5-degree spacing in the Region 2 BSS Plan’s co-coverage nine-degree spacing construct, more rights than a foreign filing would have in an unplanned band.<sup>21</sup>

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<sup>19</sup> SES Comments at 4. On March 28, 2002, the applicants submitted a Technical Supplement to their application, which included additional technical information and data for NEW ECHOSTAR 1. *See Letter from Gary Epstein, et al., and Pantelis Michalopoulos, et al., to William F. Caton*, Technical Supplement (March 28, 2002). It has come to the Applicants’ attention that the Technical Supplement on file at the Commission appears to be missing certain pages relating to various annexes to the ITU Radio Regulations. The Applicants are today refileing the Technical Supplement in order to ensure that the Commission has a complete copy of the document. In the Technical Supplement, the Applicants have submitted all of the information that is needed by the Commission to complete Annexes 1 and 2 to Appendix S30 and Appendix S30A. Moreover, the Technical Supplement also includes the basic characteristics and interference analysis limits relating to the feeder link portion of the system as well as the downlink and feeder link spot beam contours. *Id.* A copy of this Technical Supplement, without the CD-ROM referenced in Item B.3(g)(5), is being attached to this Joint Opposition as Exhibit A.

<sup>20</sup> *See* 47 C.F.R. §25.140(b)(2).

<sup>21</sup> Furthermore, SES ignores the fact that its own, recently announced proposal to provide DBS service in the United States from a new orbital location set forth in a U.K.-filed modification to the Region 2 BSS Plan may also be inconsistent with the ITU Radio Regulations. Specifically, Article 23 of the Radio Regulations requires Administrations



In any event, based upon past Commission actions on applications for new DBS satellites, an interference analysis of NEW ECHOSTAR 1 and the AMERICOM2HOME satellite would not be of decisional significance because SES is not currently authorized to serve the U.S. market with DBS services from a foreign-licensed satellite. For example, in *DIRECTV Enterprises, Inc.*, DA 01-2402 (Int. Bur. rel. Oct. 26, 2001), the International Bureau granted the application of DIRECTV to launch and operate DIRECTV 4S, a spot-beam satellite, at the 101° W.L. orbital location, despite its effect on some Canadian test points located in the United States. The Bureau concluded, however, that because no Canadian system is currently authorized to provide DBS service in the United States, and since the United States did not make any market access commitments for DBS pursuant to the World Trade Organization Agreement on Basic Telecommunications Services, the Canadian test points in the United States did not need to be protected from unacceptable interference. *Id.* at ¶ 7. Similarly, because AMERICOM2HOME has not yet been authorized to provide DBS service in the United States, it need not be protected by any U.S. DBS system, including NEW ECHOSTAR 1.

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in devising the characteristics of BSS satellites to use “all technical means available . . . to reduce, to the maximum, the radiation over the territory of other countries unless an agreement has been previously reached with such countries.” *See* ITU Radio Regulation 23.13. If no agreement is reached between the two Administrations, then ITU Radio Regulation 23.13B instructs the Radiocommunication Bureau to delete the territory of the objecting Administration from the service area of the proposed satellite system. In the case of SES’s novel proposal, this Radio Regulation has been ignored entirely, as reflected in the satellite gain contours attached to the SES petition for declaratory ruling which show a clear intent to serve the entire continental United States. *See* SES Petition at Figures 1-4, at pp. 24-27. EchoStar is unaware of any agreement between the affected Administrations regarding SES’s entry into the U.S. DBS market using a satellite to be located in a new orbital location proposed in a U.K.-filed modification to the Region 2 BSS Plan. Moreover, the SES proposal does not meet certain criteria set forth in Appendix S30. This is not to say that this failure of compliance is disabling, or that it need prejudice SES’s request to serve the U.S. market. At the same time, however, it is certain that SES’s non-conforming proposal does not give it standing to object to the NEW ECHOSTAR 1 application.

Accordingly, SES's claims of technical deficiencies in the NEW ECHOSTAR 1 application must be rejected. Any other result would be inconsistent with the Commission's Rules and policies, and would disserve the public interest. New EchoStar would expect, however, that in accordance with the Commission's standard practices for considering DBS satellite applications that are not yet consistent with the ITU Region 2 BSS Plans, it would condition the New EchoStar authorization on: (1) the satellite system not causing greater interference than that which would occur from the current U.S. assignments in the Region 2 Plans to other BSS or feeder link assignments, or other services or satellite systems operating in accordance with the ITU Radio Regulations; and (2) no guarantee of protection from interference caused by radio stations authorized by other Administrations, unless and until the Region 2 BSS Plans are modified.<sup>22</sup> These conditions are consistent with the Commission's Rules, and fully satisfy the international obligations of the United States under the ITU Convention and Radio Regulations.

**B. There Is No Legitimate Basis for Conditioning the Merger on an "Open Access" Condition for New EchoStar's Local Programming**

SES's request for a condition that would essentially create an "open access" requirement on New EchoStar to provide all of its local programming on NEW ECHOSTAR 1 to other MVPD providers suffers from the same infirmities as many of the other conditions proposed by various parties to the merger proceeding.<sup>23</sup> As is the case with respect to the

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<sup>22</sup> See, e.g., *DIRECTV 4S* and *EchoStar 7*, *supra*.

<sup>23</sup> As an initial matter, the basic premise asserted by SES in support of its requested condition is incorrect. While the NEW ECHOSTAR 1 satellite has been proposed as a means of achieving Applicants' "Local Channels, All Americans" plan to serve all 210 DMA's with local broadcast channels, this plan requires the use of all four of the Applicants' planned and operational spot beam satellites. Thus, NEW ECHOSTAR 1 – with its eight spot beam frequencies – will only be able to provide a portion of the local programming to all 210 DMAs. As explained in the Application, an additional 20 spot

request of certain parties in the merger proceeding for a condition to mandate access by unaffiliated Internet service providers (“ISP”) on the merged company’s broadband satellite platforms, SES’s proposed local programming condition is unwarranted and would not be in the public interest. Any such “open access” condition is only considered where there is a demonstration of market power and even then the Commission has been hesitant to create such an obligation. Thus, the Commission has steadfastly refused to mandate “open access” obligations on all cable systems, instead letting market forces to determine how many ISP’s would be included with their cable modem offerings.<sup>24</sup>

The merger will not result in New EchoStar obtaining market power or control of any bottleneck facilities that would require a solution as radical as a condition requiring the

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beam frequencies on four other operational and planned DBS satellites located at three orbital slots will be required to serve all of these areas (including necessary in-orbit back-up capacity). Thus, in addition to the fact that the requested condition is not warranted in this case, it would not even meet the stated concern of SES regarding the provision of local programming by its third-party customers.

<sup>24</sup> See e.g., *In the Matter of Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations from MediaOne Group, Inc., Transferor, to AT&T Corp., Transferee*, 15 FCC Rcd. 9816, 9872-73 (2000) (“*MediaOne-AT&T MO&O*”) (“We find insufficient evidence to support the imposition of an ‘open/forced access’ requirement on the merged entity at this time, given the potential for competition from alternative broadband providers and the potential for unaffiliated ISPs to gain direct access to provide broadband services over the cable infrastructure.”); *In the Matter of Applications for Consent to the Transfer of Control of Licenses and Section 214 Authorizations by Time Warner, Inc. and America Online, Inc., Transferors, to AOL Time Warner, Inc., Transferee*, 16 FCC Rcd. 6547, 6602, n.363 (2001) (“[W]e decline to mandate ‘open access’ to AOL Time Warner’s cable systems....”); *In the Matter of Inquiry Concerning High-Speed Access to the Internet over Cable and Other Facilities*, Declaratory Ruling and Notice of Proposed Rulemaking, GN Docket No. 00-185, CS Docket No. 02-52, FCC 02-77 (rel. March 15, 2002) (“If we were to require cable operators to unbundle cable modem service merely because they also provide cable telephony service, we would in essence create an open access regime for cable Internet service applicable only to some operators. We believe it is more appropriate to examine the issue of open access on a national basis involving all those Title VI cable systems that choose to offer cable modem service, rather than to divide and treat separately those that also have a common carrier local telephony offering.”).

sharing of satellite capacity. New EchoStar will not have market power in any relevant market. As the Commission is well aware, cable operators dominate both the MVPD and broadband Internet access markets. Indeed, one of the principal reasons for approving the merger is to strengthen DBS as it attempts to compete with the market power of cable as it upgrades, expands and bundles its service offerings. EchoStar and Hughes can only hope to compete effectively against the dominant cable companies by combining their spectrum and satellite resources so that they can continue to offer competitive products and services. Under such circumstances, the requested open access condition is wholly inappropriate.

In sum, the requested condition, which the Commission has declined to impose on an industry-wide basis even on dominant cable incumbents, would only act to retard the development of DBS as an effective competitor to cable.

## **VI. NEW ECHOSTAR WILL GREATLY ENHANCE THE PROGRAMMING ALTERNATIVES FOR ETHNIC CONSTITUENCIES**

As noted in the New EchoStar Transfer Application, as well as the subsequent Opposition filed with the Commission, the increased spectrum efficiencies obtained through a merger of EchoStar and DIRECTV would greatly enhance the programming alternatives for ethnic constituencies.<sup>25</sup> Specifically, the proposed merger would facilitate new and improved niche programming, including more ethnic and foreign language programming, providing audiences with expanded viewing opportunities. Perhaps this is why the merger application is supported by the League of United Latin American Citizens (“LULAC”), the oldest and largest Hispanic civil rights group.<sup>26</sup>

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<sup>25</sup> See New EchoStar Transfer Application at 34-35; *see also* Opposition at 2, 20-21.

<sup>26</sup> See League of United Latin American Citizens Comments at 1 (Feb. 7, 2002) (“[The League] believes that the proposed merger... would provide improved communications services to the nation’s Hispanic community... EchoStar & DTV have offered a great

While the National Council of La Raza (“NCLR”) asks that the Commission condition the merger on New EchoStar’s agreement to provide a plan “addressing and rectifying the glaring omission of English-speaking Latino-based programming,”<sup>27</sup> the Applicants believe that New EchoStar will, in fact, be able to provide more of *all* types of specialized programming -- including the English-speaking, Latino-based programming that NCLR seeks. Thus, the increase in specialized programming that would result from the merger would not only be of benefit to consumers, but would also “help DBS more vigorously compete against the cable industry’s ability to upgrade unilaterally its bandwidth to provide these services on a digital-cable tier.”<sup>28</sup>

Moreover, neither EchoStar nor DIRECTV has a strategy of acquiring interests in programmers with the purpose of influencing the development of programming services.<sup>29</sup> As a result, New EchoStar will only have access to the programming made available by national and local broadcasters and content providers. Nevertheless, to the extent that there is a demand for more specialized programming options such as that sought by NCLR, the Applicants would anticipate that the video content market would respond by developing such programming. In

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deal of programming for Spanish-dominant and bilingual households, but the potential exists for even more.”).

<sup>27</sup> See National Council of La Raza Petition to Deny and Motion to Dismiss at 1 (May 20, 2002).

<sup>28</sup> See New EchoStar Transfer Application at Attachment A -- Declaration of Dr. Robert D. Willig at ¶¶ 13, 15; see also Opposition at Attachment A -- Declaration of Dr. Robert D. Willig at ¶¶ 22, 47.

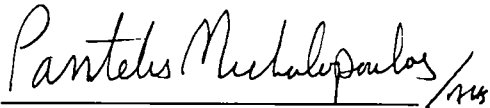
<sup>29</sup> See Opposition of EchoStar Communications Corporation, General Motors Corporation and Hughes Electronics Corporation at 6 (Jan. 18, 2002) (responding to Pegasus’ allegation that EchoStar’s deal with Vivendi was “inconsistent with the merger applicants’ statements that the New EchoStar will not pursue a ‘strategy of vertical integration.’”).

addition, as a business intent on meeting consumer demands, New EchoStar will respond to such demands accordingly.

## VII. CONCLUSION

As discussed above, granting of the Application will significantly benefit consumers through increased competition and dramatically expand satellite-delivered local broadcast television signals. For the foregoing reasons, Applicants respectfully request that the Commission dismiss the Petitions and approve the Application.

Respectfully submitted,



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CERTIFICATE OF SERVICE

I, Daniel P. Ryan, hereby certify that on this 30<sup>th</sup> day of May, 2002, copies of the foregoing "Joint Opposition and Reply Comments" were sent by first class mail postage pre-paid, to the following:

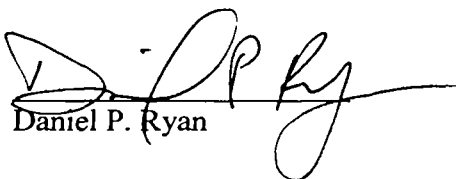
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## **Exhibit A**



# **TECHNICAL ANNEX**

## **NEW ECHOSTAR-1 (USABSS-16)**

### **INTERFERENCE ANALYSES**

**March 2002**

**APPENDIX 1**

**ANNEX 2 TO APPENDIX S30**

**APPENDIX S4 INFORMATION FOR USABSS-16**

**BASIC CHARACTERISTICS TO BE FURNISHED IN NOTICES RELATING TO  
SPACE STATIONS IN THE BROADCASTING-SATELLITE SERVICE**

## **APPENDIX S4 INFORMATION FOR USABSS-16**

### **A.1 Identity of the satellite network**

a) Identity of a satellite network: USABSS-16

b) Country: USA

Beam Identification: US16BS01, US16BS02, US16BS03, US16BS04, US16BS05, US16BS06, US16BS07, US16BS08, US16BS09, US16BS10, US16BS11, US16BS12, US16BS13, US16BS14, US16BS15, US16BS16, US16BS17, US16BS18, US16BS19, US16BS20, US16BS21, US16BS22, US16BS23, US16BS24, US16BS25, US16BS26, US16BS27, US16BS28, US16BS29, US16BS30, US16BS31, US16BS32, US16BS33, US16BS34, US16BS35, US16BS36, US16BS37, US16BS38

f) Country symbol of the notifying administration: USA

### **A.2 Date of Bringing Into Use**

a) Date of Bringing into Use: February 2005

### **A.3 Operation administration or agency**

A.3 Operating administration or agency: 120 (USA)

### **A.4 Orbital information**

a) For the case of a space station onboard a GSO satellite:

1) nominal geographical longitude on the geostationary-satellite orbit: 110° W.L.

2) planned longitudinal tolerance and inclination excursion:  $\pm 0.05^\circ$  E-W;  $\pm 0.05^\circ$  N-S

### **A.5 Coordination**

### **A.6 Agreements**

### **A.8 Rain Climatic Zones:**

A.8 Rain climatic zones consistent with Figure 3 of Annex 5 of Appendix 30

### **A.11 Regular Hours of Operation**

A.11 Regular Hours of Operation: 24 hrs./day; 365 days/year

### **B.1 Designation of the satellite antenna beam**

US16BS01, US16BS02, US16BS03, US16BS04, US16BS05, US16BS06, US16BS07, US16BS08, US16BS09, US16BS10, US16BS11, US16BS12, US16BS13, US16BS14, US16BS15, US16BS16, US16BS17, US16BS18, US16BS19, US16BS20, US16BS21,

US16BS22, US16BS23, US16BS24, US16BS25, US16BS26, US16BS27, US16BS28, US16BS29, US16BS30, US16BS31, US16BS32, US16BS33, US16BS34, US16BS35, US16BS36, US16BS37, US16BS38

### B.3 Geostationary Space Station Antenna Characteristics

- d) Pointing accuracy of the antenna: 0.1 degree in any direction
- g) For the case of a space station submitted in accordance with Appendix S30:
  - 1) co-polar and cross-polar gain of antenna: see Table 1
  - 2) shape of the beam: all beams shaped
  - 3) for circular beams: not applicable
  - 4) for elliptical beams: not applicable
  - 5) for beams other than circular or elliptical shape:
    - co-polar and cross-polar gain contours: co-polar and cross-polar beam contours in GIMS format are provided on CD-ROM accompanying this Technical Annex
    - beam aim point longitude and latitude: see Table 1

**Table 1. USABSS-16 Beam Information**

Beam	Co-pol Gain, dB	X-pol Gain, dB	Aim Point Long., W	Aim Point Lat., N	Beam	Co-pol Gain, dB	X-pol Gain, dB	Aim Point Long., W	Aim Point Lat., N
US16BS01	36.6	8.6	143.0	59.9	US16BS21	44.1	16.1	89.3	45.6
US16BS02	36.7	8.7	158.0	21.0	US16BS22	44.1	16.1	90.0	40.7
US16BS03	36.6	8.6	121.1	42.1	US16BS23	44.1	16.1	92.7	36.5
US16BS04	40.6	12.6	116.0	43.5	US16BS24	44.6	16.6	93.7	29.8
US16BS05	44.8	16.8	114.7	33.2	US16BS25	43.6	15.6	83.9	46.7
US16BS06	40.6	12.6	110.6	48.1	US16BS26	44.6	16.6	86.3	39.9
US16BS07	40.6	12.6	112.4	44.3	US16BS27	44.6	16.6	85.6	36.4
US16BS08	40.9	12.9	107.8	44.7	US16BS28	44.6	16.6	90.5	33.7
US16BS09	40.6	12.6	108.4	38.7	US16BS29	44.6	16.6	89.9	30.7
US16BS10	39.6	11.6	102.4	47.2	US16BS30	44.56	16.6	72.5	44.9
US16BS11	41.1	13.1	103.3	43.7	US16BS31	44.6	16.6	78.5	41.0
US16BS12	40.6	12.6	98.8	44.3	US16BS32	45.1	17.1	80.2	38.0
US16BS13	41.6	13.6	99.5	41.0	US16BS33	45.1	17.1	85.8	31.6
US16BS14	42.1	14.1	102.4	34.7	US16BS34	45.1	17.1	84.6	29.7
US16BS15	41.6	13.6	102.1	30.9	US16BS35	44.6	16.6	62.6	48.4
US16BS16	42.6	14.6	96.0	43.4	US16BS36	45.1	17.1	75.8	39.5
US16BS17	42.6	14.6	95.5	37.0	US16BS37	44.6	16.6	74.8	36.1
US16BS18	41.6	13.6	97.9	33.2	US16BS38	45.1	17.1	80.1	33.1
US16BS19	43.4	15.4	97.2	30.5					
US16BS20	42.6	14.6	99.3	27.5					

**C.2 Assigned frequency (frequencies)**

- a) In accordance with Appendix S30, channel numbers 18, 20, 22, 24, 26, 28, 30, 32

NOTE: Channels will not be operated simultaneously with any other BSS space stations in the 110 degree W.L. cluster

**C.4 Class of station(s) and Nature of service**

Class of Station: EV

Nature of Service: CR

**C.6 Polarization**

Type of Polarization: Circular

Sense of Polarization: Left-hand

**C.7 Class of Emission**

- a) Class of emission and necessary bandwidth:

Class of Emission: 24M0G7W

Necessary Bandwidth: 24 MHz

**C.8 Power characteristics of the transmission**

- h) Table 2 lists the power supplied to the antenna for each beam and each channel. Also provided for each beam and channel is the maximum power density per Hz.

Maximum power density per Hz for 24M0G7W emission: see Table 2

**Table 2. USABSS-16 Transmission Characteristics**

Beam	BSS CH.	Power to Antenna dBW	Max. Power Density per Hz			Beam	BSS CH.	Power to Antenna dBW	Max. Power Density per Hz		
			5 MHz	40 kHz	4 kHz				5 MHz	40 kHz	4 kHz
US16BS01	30	11.1	-62.7	-62.7	-62.7	US16BS23	18	17.2	-56.6	-56.6	-56.6
US16BS01	24	10.0	-63.8	-63.8	-63.8	US16BS24	28	19.6	-54.2	-54.2	-54.2
US16BS02	18	9.9	-63.9	-63.9	-63.9	US16BS25	24	12.1	-61.7	-61.7	-61.7
US16BS02	20	9.9	-63.9	-63.9	-63.9	US16BS26	20	14.9	-58.9	-58.9	-58.9
US16BS03	20	12.0	-61.8	-61.8	-61.8	US16BS26	28	13.1	-60.7	-60.7	-60.7
US16BS04	28	12.6	-61.2	-61.2	-61.2	US16BS26	22	13.3	-60.5	-60.5	-60.5
US16BS05	18	9.4	-64.4	-64.4	-64.4	US16BS27	26	15.5	-58.3	-58.3	-58.3
US16BS06	32	12.6	-61.2	-61.2	-61.2	US16BS27	24	17.1	-56.7	-56.7	-56.7
US16BS07	26	15.0	-58.8	-58.8	-58.8	US16BS28	32	17.3	-56.5	-56.5	-56.5
US16BS08	24	12.6	-61.2	-61.2	-61.2	US16BS28	20	17.1	-56.7	-56.7	-56.7
US16BS09	30	9.8	-64.0	-64.0	-64.0	US16BS29	22	17.3	-56.5	-56.5	-56.5

Beam	BSS CH.	Power to Antenna dBW	Max. Power Density per Hz			Beam	BSS CH.	Power to Antenna dBW	Max. Power Density per Hz		
US16BS10	30	12.7	-61.1	-61.1	-61.1	US16BS30	24	15.8	-58.0	-58.0	-58.0
US16BS11	22	15.1	-58.7	-58.7	-58.7	US16BS30	22	15.7	-58.1	-58.1	-58.1
US16BS12	32	14.0	-59.8	-59.8	-59.8	US16BS31	32	15.1	-58.7	-58.7	-58.7
US16BS13	26	13.8	-60.0	-60.0	-60.0	US16BS31	30	15.0	-58.8	-58.8	-58.8
US16BS14	18	15.2	-58.6	-58.6	-58.6	US16BS31	18	14.5	-59.3	-59.3	-59.3
US16BS15	26	14.6	-59.2	-59.2	-59.2	US16BS32	28	16.2	-57.6	-57.6	-57.6
US16BS16	18	12.1	-61.7	-61.7	-61.7	US16BS33	30	20.0	-53.8	-53.8	-53.8
US16BS17	24	18.0	-55.8	-55.8	-55.8	US16BS33	18	19.7	-54.1	-54.1	-54.1
US16BS18	22	19.4	-54.4	-54.4	-54.4	US16BS34	20	19.7	-54.1	-54.1	-54.1
US16BS19	32	16.0	-57.8	-57.8	-57.8	US16BS34	28	15.8	-58.0	-58.0	-58.0
US16BS20	18	8.9	-64.9	-64.9	-64.9	US16BS35	28	13.2	-60.6	-60.6	-60.6
US16BS21	20	11.0	-62.8	-62.8	-62.8	US16BS36	26	15.9	-57.9	-57.9	-57.9
US16BS21	22	14.6	-59.2	-59.2	-59.2	US16BS36	20	13.5	-60.3	-60.3	-60.3
US16BS21	28	14.5	-59.3	-59.3	-59.3	US16BS37	24	17.5	-56.3	-56.3	-56.3
US16BS22	26	15.6	-58.2	-58.2	-58.2	US16BS38	32	18.2	-55.6	-55.6	-55.6
US16BS22	32	14.3	-59.5	-59.5	-59.5	US16BS38	22	20.1	-53.7	-53.7	-53.7
US16BS22	30	16.0	-57.8	-57.8	-57.8						

### C.9 Information on modulation characteristics

- b) In the case of a space station submitted in accordance with Appendix S30:
- 1) type of modulation: QPSK
  - 2) pre-emphasis characteristics: not applicable
  - 3) TV standard: not applicable
  - 4) sound-broadcasting characteristics: time division multiplexed compressed digital data
  - 5) frequency deviation: not applicable
  - 6) composition of the baseband: time division multiplexed compressed video and audio
  - 7) type of multiplexing of the video and sound signal: time division multiplex
  - 8) energy dispersal characteristics: carrier will always be modulated
  - 9) digital modulation: effective bit rate: 30.32 Mbps (6/7 code rate), 23.58 Mbps (2/3 code rate); transmitted bit rate: 40 Mbps
  - 10) roll-off factor of the filter of the receiver: in accordance with ITU-R BO1293-1
- d) For stations operating in a frequency band subject to Nos. S22.5C, S22.5D or S22.5F provide:
- the type of mask;
  - the mask identification code.

Not applicable

### C.11 Service Area

- c) Spot beams provide local coverage to several cities within the contiguous U.S. plus Hawaii and portions of Alaska (see Figure 1)

#### Test points

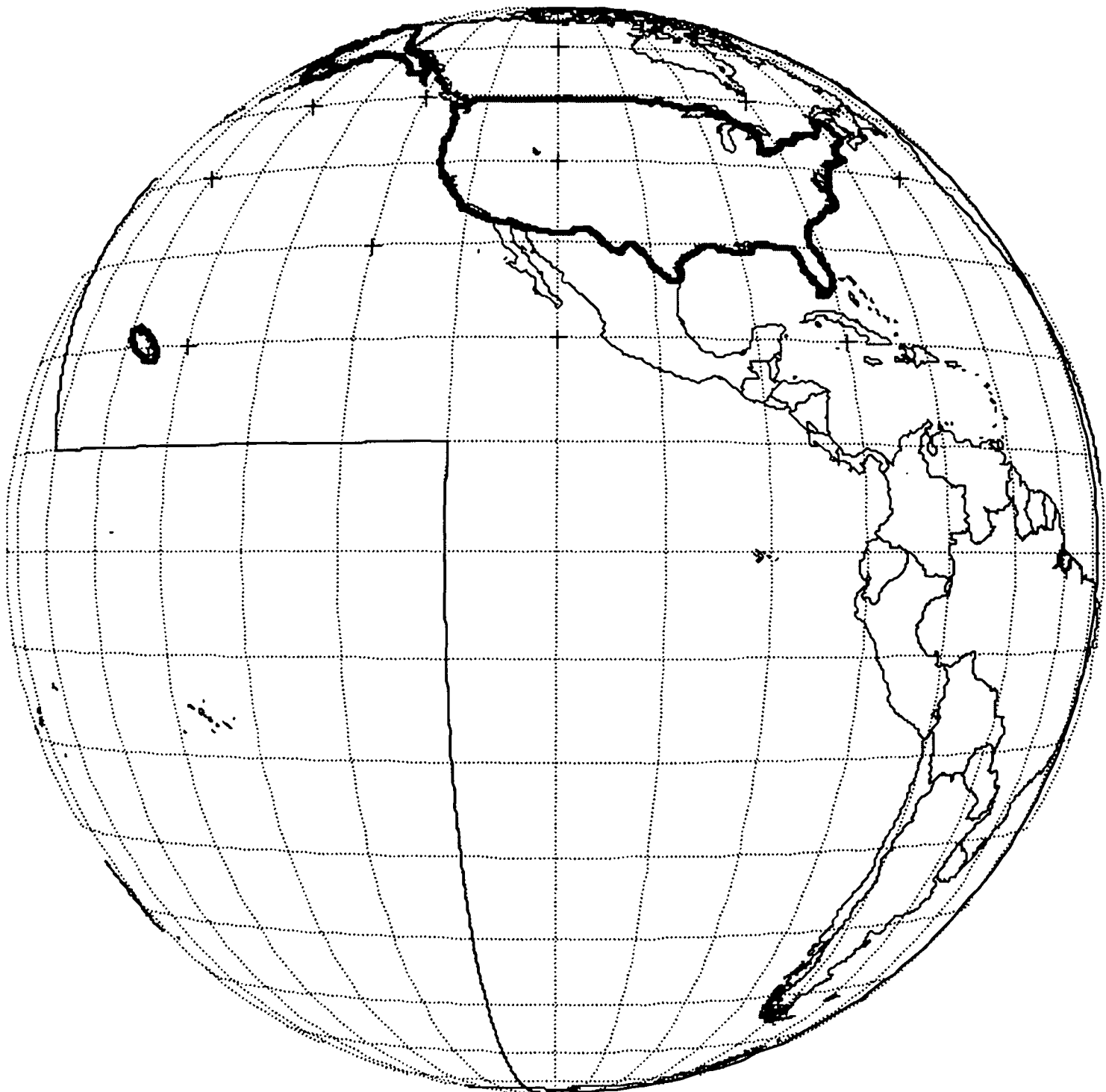
Beam	Test Point	Lat., N	Long., W
US16BS01	1	143.0	59.9
US16BS02	1	158.0	21.0
US16BS03	1	121.1	42.1
US16BS04	1	116.0	43.5
US16BS05	1	114.7	33.2
US16BS06	1	110.6	48.1
US16BS07	1	112.4	44.3
US16BS08	1	107.8	44.7
US16BS09	1	108.4	38.7
US16BS10	1	102.4	47.2
US16BS11	1	103.3	43.7
US16BS12	1	98.8	44.3
US16BS13	1	99.5	41.0
US16BS14	1	102.4	34.7
US16BS15	1	102.1	30.9
US16BS16	1	96.0	43.4
US16BS17	1	95.5	37.0
US16BS18	1	97.9	33.2
US16BS19	1	97.2	30.5
US16BS20	1	99.3	27.5

Beam	Test Point	Lat., N	Long., W
US16BS21	1	89.3	45.6
US16BS22	1	90.0	40.7
US16BS23	1	92.7	36.5
US16BS24	1	93.7	29.8
US16BS25	1	83.9	46.7
US16BS26	1	86.3	39.9
US16BS27	1	85.6	36.4
US16BS28	1	90.5	33.7
US16BS29	1	89.9	30.7
US16BS30	1	72.5	44.9
US16BS31	1	78.5	41.0
US16BS32	1	80.2	38.0
US16BS33	1	85.8	31.6
US16BS34	1	84.6	29.7
US16BS35	1	62.6	48.4
US16BS36	1	75.8	39.5
US16BS37	1	74.8	36.1
US16BS38	1	80.1	33.1

### C.15 Description of the group(s) required in the case of non-simultaneous emissions

USABSS-16's spot beams (US16BS01 – US16BS38) are grouped in Group 21 with the Plan beam USAEH003. The USABSS-16 beams will not be operated simultaneously on the same channel with any other space station in Group 21.

**Figure 1. USABSS-16 Downlink Service Area (Item C.11)**





## **APPENDIX 2**

### **ANNEX 2 TO APPENDIX 30A**

#### **APPENDIX S4 INFORMATION FOR USABSS-16**

**BASIC CHARACTERISTICS TO BE FURNISHED IN NOTICES RELATING TO  
FEEDER LINK STATIONS IN THE FIXED-SATELLITE SERVICE OPERATING IN  
THE FREQUENCY BANDS 14.5 – 14.8 GHZ AND 17.3 - 18.1 GHZ**

## **APPENDIX S4 INFORMATION FOR USABSS-16**

### **A.1 Identity of the satellite network**

- a) Identity of a satellite network: USABSS-16
- c) Country and Beam Identification: USA and US16RCV1
- f) Country symbol of the notifying administration: USA

### **A.2 Date of Bringing Into Use**

- a) Date of Bringing into Use: February 2005

### **A.3 Operation administration or agency**

- A.3 Operating administration or agency: 120 (USA)

### **A.4 Orbital information**

- a) For the case of a space station onboard a GSO satellite:
  - 1) nominal geographical longitude on the geostationary-satellite orbit: 110° W.L.
  - 2) planned longitudinal tolerance and inclination excursion:  $\pm 0.05^\circ$  E-W;  $\pm 0.05^\circ$  N-S

### **A.5 Coordination**

### **A.6 Agreements**

### **A.7 Earth station site characteristics**

For a specific earth station:

- a)1) the horizon elevation angle in degrees for each azimuth around the earth station: see Tables 1 and 2.

**Table 1. Los Angeles Broadcast Center Horizon Elevation Angles**

Azimuth, Degrees	Horizon Elevation Angle, Deg.	Azimuth, Degrees	Horizon Elevation Angle, Deg.	Azimuth, Degrees	Horizon Elevation Angle, Deg.	Azimuth, Degrees	Horizon Elevation Angle, Deg.
0	0.5	90	0.6	180	1.0	270	0.0
5	0.4	95	0.6	185	1.0	275	0.0
10	0.6	100	0.8	190	0.9	280	0.0
15	0.6	105	1.0	195	1.1	285	0.0
20	0.6	110	1.1	200	1.0	290	0.0
25	0.4	115	1.1	205	0.9	295	0.0
30	0.2	120	1.1	210	0.6	300	0.0
35	0.4	125	1.3	215	0.6	305	0.3
40	0.4	130	1.3	220	0.0	310	0.4
45	1.0	135	1.2	225	0.0	315	0.4
50	1.2	140	1.0	230	0.0	320	0.4
55	1.2	145	1.3	235	0.0	325	0.5
60	1.3	150	1.3	240	0.0	330	0.5
65	1.2	155	1.3	245	0.0	335	0.5
70	1.3	160	1.5	250	0.0	340	0.7
75	1.2	165	1.5	255	0.0	345	0.6
80	1.0	170	1.4	260	0.0	350	0.5
85	0.8	175	0.9	265	0.0	355	0.5

**Table 2. Cheyenne Broadcast Center Horizon Elevation Angles**

Azimuth, Degrees	Horizon Elevation Angle, Deg.	Azimuth, Degrees	Horizon Elevation Angle, Deg.	Azimuth, Degrees	Horizon Elevation Angle, Deg.	Azimuth, Degrees	Horizon Elevation Angle, Deg.
0	0.9	90	0.2	180	0.7	270	1.2
5	0.6	95	0.2	185	0.6	275	1.2
10	0.6	100	0.0	190	0.7	280	1.2
15	0.6	105	0.0	195	0.7	285	1.2
20	0.6	110	0.0	200	0.8	290	1.2
25	0.6	115	0.0	205	0.8	295	1.2
30	0.3	120	0.2	210	0.9	300	1.2
35	0.4	125	0.3	215	0.9	305	1.1
40	0.4	130	0.4	220	0.9	310	1.1
45	0.3	135	0.3	225	1.0	315	1.2
50	0.3	140	0.3	230	1.0	320	0.9
55	0.3	145	0.3	235	1.0	325	1.0
60	0.3	150	0.3	240	1.0	330	1.0
65	0.3	155	0.3	245	1.0	335	1.0
70	0.0	160	0.4	250	1.0	340	0.9
75	0.0	165	0.7	255	1.0	345	0.9
80	0.0	170	0.7	260	1.0	350	0.9
85	0.0	175	0.7	265	1.1	355	0.9

- b) that is operating to an associated GSO space station:
- 1) the planned minimum angle of elevation of the antenna in the direction of maximum radiation in degrees from the horizontal plane:  
Los Angeles Broadcast Center: 49.5 degrees  
Cheyenne Broadcast Center: 42.2 degrees
- d) the altitude (meters) of the antenna above mean sea level:  
Los Angeles Broadcast Center: 17 meters  
Cheyenne Broadcast Center: 1808 meters

#### **A.11 Regular Hours of Operation**

A.11 Regular Hours of Operation: 24 hrs./day; 365 days/year

#### **A.12 Range of Automatic Gain Control**

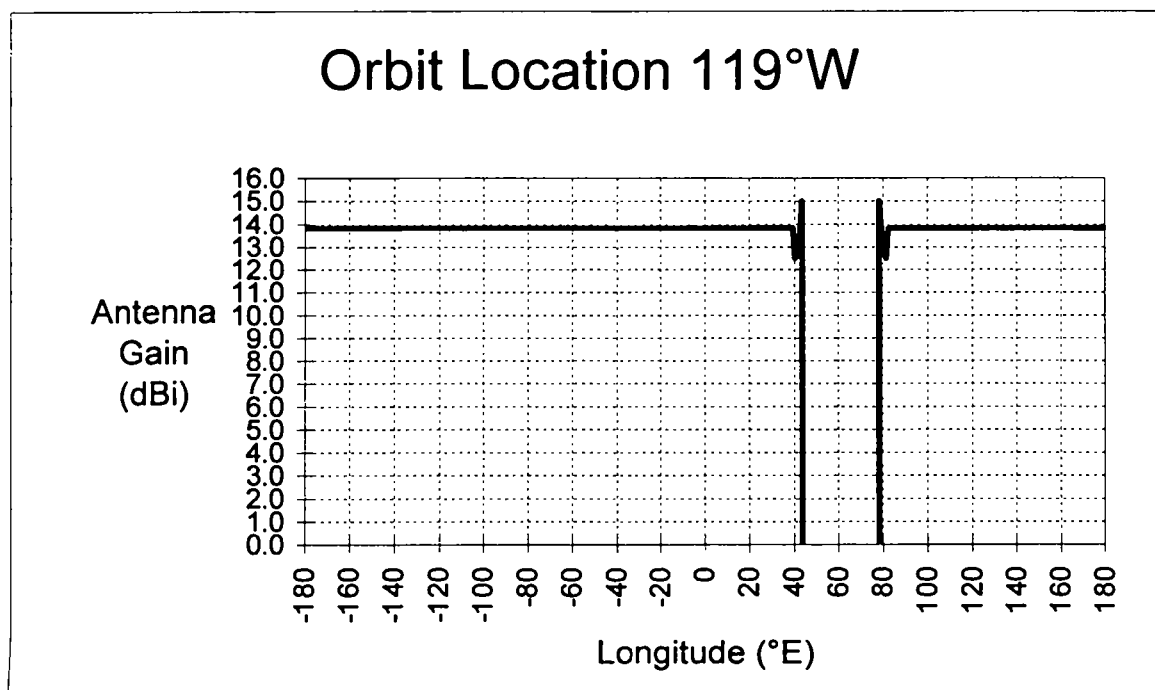
A.12 Range of Automatic Gain Control: 12 dB

#### **B.1 Designation of the satellite antenna beam**

US16RCV1

#### **B.3 Geostationary Space Station Antenna Characteristics**

- d) pointing accuracy of the antenna: 0.1 degree in any direction
- f) Gain of antenna towards the GSO Arc: See figure below



- g) For the case of a space station submitted in accordance with Appendix S30, Appendix S30A, or Appendix S30B:
- 1) co-polar antenna gain (receive): 48.3 dBi; cross-polar antenna gain (receive): 14.7 dBi
  - 2) shape of the beam: shaped
  - 3) for circular beams: not applicable
  - 4) for elliptical beams: not applicable
  - 5) for beams other than circular or elliptical shape:
    - co-polar and cross-polar gain contours: see Figures 1 and 2 and also on CD-ROM
    - beam aim point longitude and latitude:  
Longitude: 112.0° W  
Latitude: 37.0° N

**C.2 Assigned frequency (frequencies)**

- a) Assigned frequencies: In accordance with Appendix S30A, channel numbers 1 - 32.

**C.3 Assigned frequency band**

- a) The bandwidth of the assigned frequency band in kHz: 24,000 kHz

**C.4 Class of station(s) and nature of service**

Class of Station: EV

Nature of Service: CR

**C.5 Receiving system noise temperature**

- a) In the case of a space station, the lowest total receiving system noise temperature, in kelvins, referred to the output of the receiving antenna of the space station: 7940° K

**C.6 Polarization**

Type of Polarization: Circular

Sense of Polarization: right-hand and left-hand

**C.7 Class of Emission**

- a) Class of emission and necessary bandwidth:  
Class of Emissions: 24M0G7W  
Necessary Bandwidth: 24 MHz

**C.8 Power characteristics of the transmission**

- i) In the case of an earth station submitted in accordance with Appendix S30A:
- total transmitting power supplied to the input of the antenna: 13.9 dBW
  - maximum power density averaged over worst 1 MHz: -59.9 dBW/Hz

- maximum power density averaged over worst 24 MHz: -59.9 dBW/Hz
- range of power control: 12 dB

### **C.9 Information on modulation characteristics**

- b) In the case of a space station submitted in accordance with Appendix S30 or Appendix S30A:
1. type of modulation: QPSK
  2. pre-emphasis characteristics: not applicable
  3. TV standard: not applicable
  4. sound-broadcasting characteristics: time division multiplexed compressed digital data
  5. frequency deviation: not applicable
  6. composition of the baseband: time division multiplexed compressed video and audio
  7. type of multiplexing of the video and sound signal: time division multiplex
  8. energy dispersal characteristics: carrier will always be modulated
  9. digital modulation: effective bit rate: 30.32 Mbps (6/7 code rate), 23.58 Mbps (2/3 code rate); transmitted bit rate: 40 Mbps
  10. roll-off factor of the filter of the receiver: in accordance with ITU-R BO1293-1
- d) For stations operating in a frequency band subject to Nos. S22.5C, S22.5D or S22.5F provide:
- the type of mask;
  - the mask identification code.
- Not applicable

### **C.10 Type and identity of associated stations**

#### **C.10b) Identity of Earth Station(s) and Geographical Coordinates**

##### Los Angeles Broadcast Center

Latitude: 33° 59' 01"

Longitude: 118° 25' 27"

#### **C.10 c)**

##### **1) Class of Station/Nature of Service:**

Class of station: EV

Nature of service: CR

2) Isotropic Gain (dBi) in the direction of maximum radiation: 64.1 dBi

3) Beamwidth (degrees) between the half power points: 0.11°

4) Measured or Reference Radiation Pattern:

Co-polar:	29 - 25 log $\theta$	$1^\circ < \theta \leq 7^\circ$
	+8 dBi	$7^\circ < \theta \leq 9.2^\circ$
	32 - 25 log $\theta$	$9.2^\circ < \theta \leq 48^\circ$
	-10 dBi	$48^\circ < \theta \leq 180^\circ$
Cross-polar:	19 - 25 log $\theta$	$1.8^\circ < \theta \leq 7^\circ$
	-2 dBi	$7^\circ < \theta \leq 180^\circ$

6) Antenna Diameter (m): 11.3 meters

Cheyenne Broadcast Center

Latitude: 41° 07' 56"

Longitude: 104° 44' 09"

C.10 c)

1) Class of Station/Nature of Service:

Class of station: EV

Nature of service: CR

2) Isotropic Gain (dBi) in the direction of maximum radiation: 65 dBi

3) Beamwidth (degrees) between the half power points: 0.10°

4) Measured or Reference Radiation Pattern:

Co-polar:	29 - 25 log $\theta$	$1^\circ < \theta \leq 7^\circ$
	+8 dBi	$7^\circ < \theta \leq 9.2^\circ$
	32 - 25 log $\theta$	$9.2^\circ < \theta \leq 48^\circ$
	-10 dBi	$48^\circ < \theta \leq 180^\circ$
Cross-polar:	19 - 25 log $\theta$	$1.8^\circ < \theta \leq 7^\circ$
	-2 dBi	$7^\circ < \theta \leq 180^\circ$

6) Antenna Diameter (m): 13.2 meters

**C.11 Service Area**

b) Service Area: Figure 3 - USA

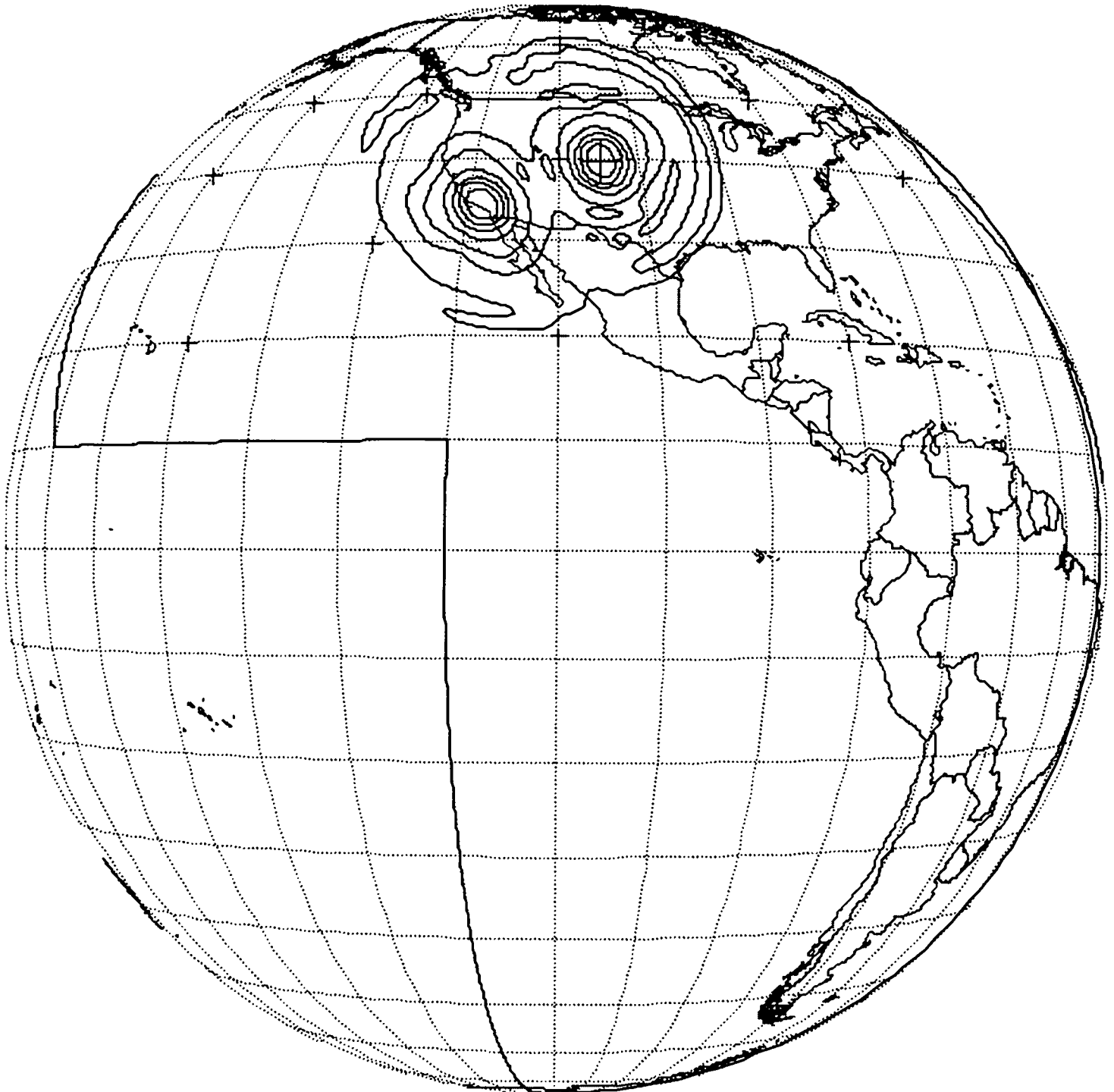
Test Point	Latitude, N	Longitude, W
1	34.0	118.4
2	41.1	104.7

**C.15      Description of the group(s) required in the case of non-simultaneous emissions**

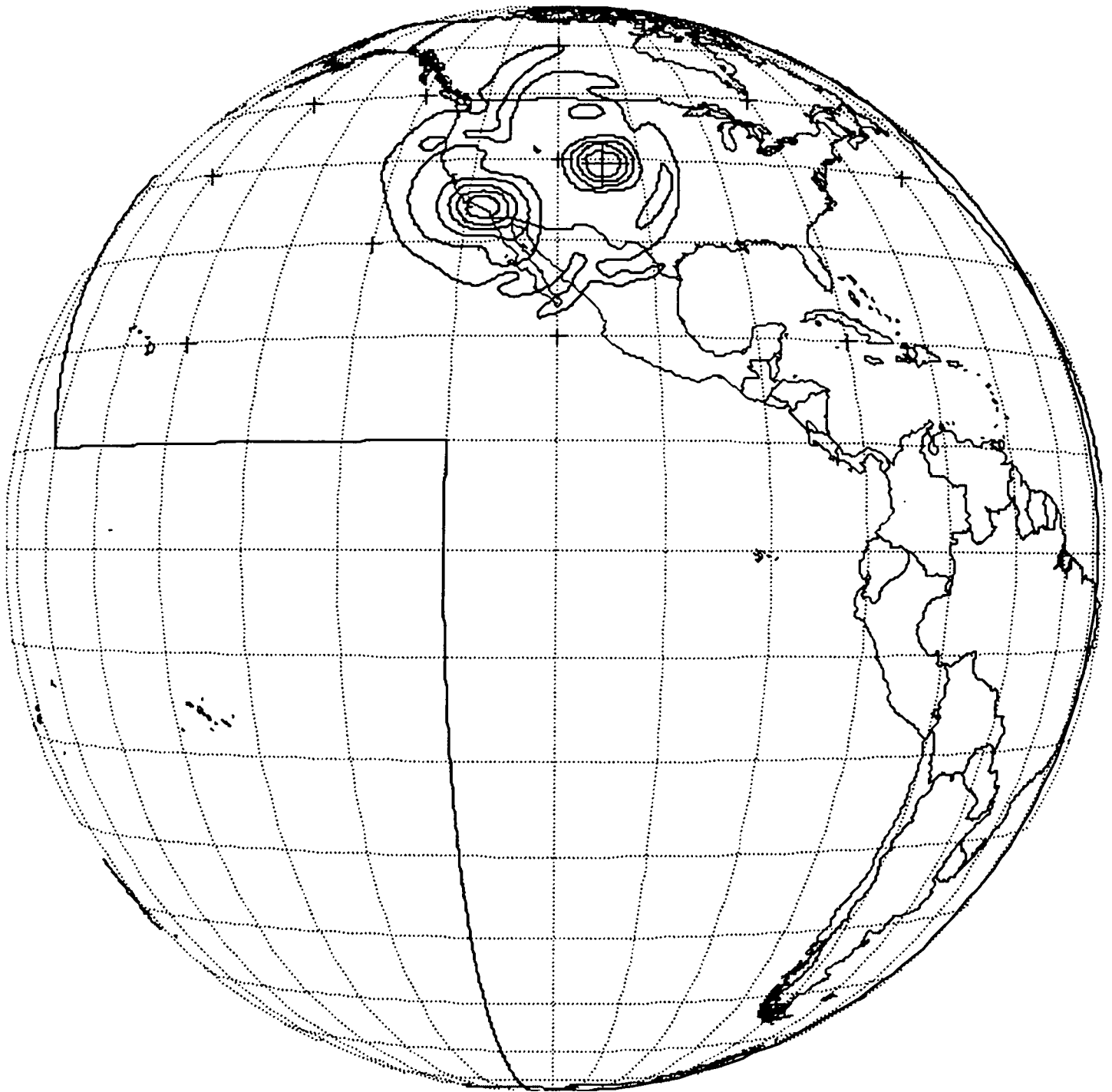
USABSS-16's feeder link beam is grouped in Group 21 with the Plan beam USAEH003.



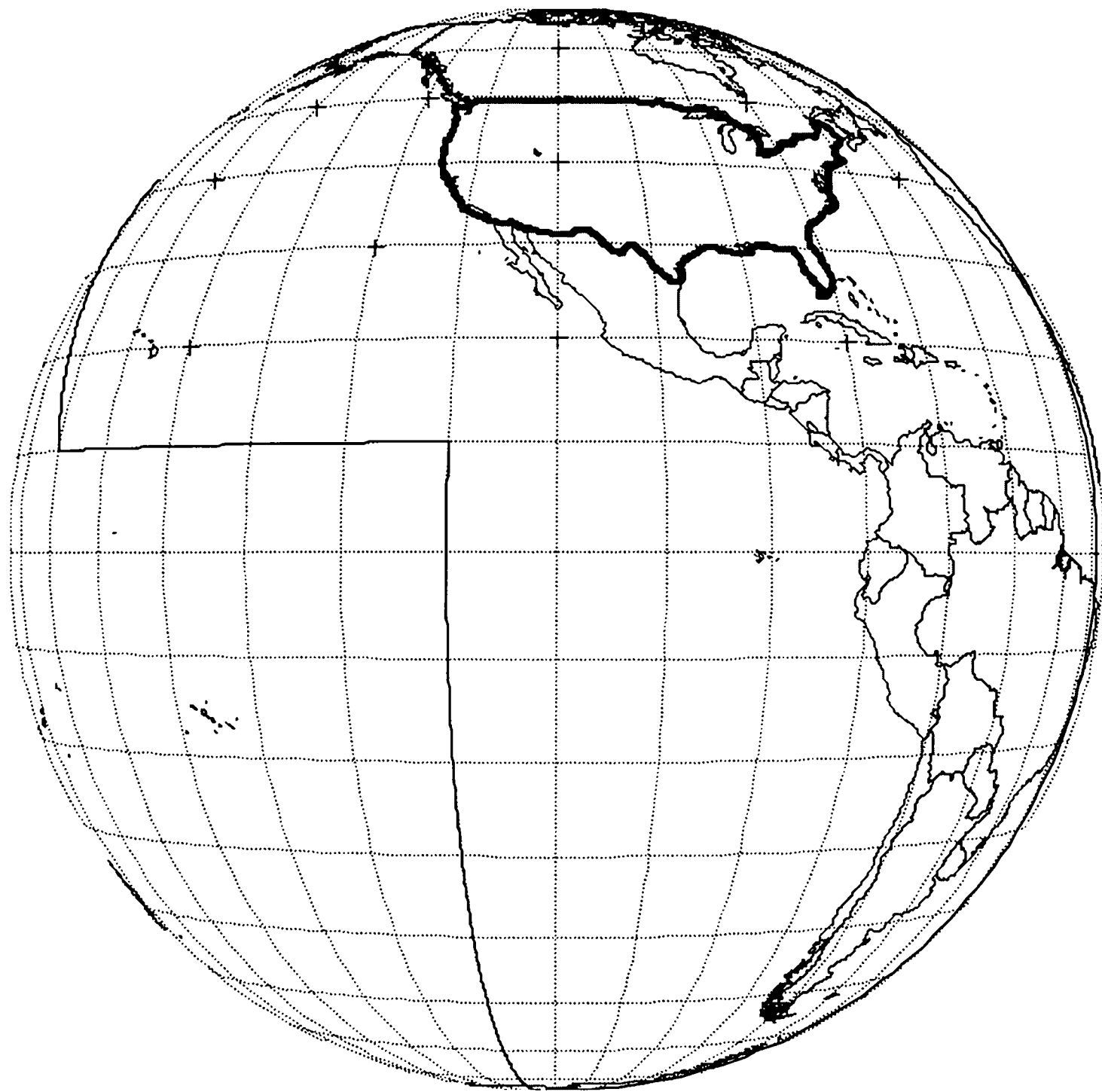
**Figure 1. Space Station Receive Antenna Co-Polar Gain Contour (Item B.3 g 3))**



**Figure 2. Space Station Receive Antenna Cross-Polar Gain Contour (Item B.3 g) 3))**



**Figure 3. USABSS-16 Feeder Link Service Area (Item C.11)**



## **APPENDIX 3**

### **ANNEX 1 TO APPENDIX S30**

#### **USABSS-16**

**LIMITS FOR DETERMINING WHETHER A SERVICE OF AN ADMINISTRATION IS  
AFFECTED BY A PROPOSED MODIFICATION TO THE PLANS OR WHEN IT IS  
NECESSARY UNDER THIS APPENDIX TO SEEK THE AGREEMENT OF ANY  
OTHER ADMINISTRATION**

## ANNEX 1 OF APPENDIX S30 FOR USABSS-16

- 1 Limits for the interference into frequency assignments in conformity with the Regions 1 and 3 Plan or with the Regions 1 and 3 List or into new or modified assignments in the Regions 1 and 3 List.**

Not Applicable to Region 2 modifications.

- 2 Limits to the change in the overall equivalent protection margin for frequency assignments in conformity with the Region 2 Plan.**

A detailed interference analysis will be performed using MSPACE to determine which administrations, if any, are affected. Coordination will be performed if required.

- 3 Limits to the change in the power flux-density to protect the broadcasting-satellite service in Regions 1 and 2 in the band 12.2-12.5 GHz and in Region 3 in the band 12.5-12.7 GHz.**

*For Region 2 modifications not to affect assignments in Region 1 or 3, the power flux density shall not exceed the limits given below:*

$-147 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	<i>for</i>	$0^\circ \leq \theta < 0.44^\circ$
$-138 + 25 \log \theta \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	<i>for</i>	$0.44^\circ \leq \theta < 19.1^\circ$
$-106 \text{ dB}(W/(m^2 \cdot 27 \text{ MHz}))$	<i>for</i>	$\theta \geq 19.1^\circ$

*where  $\theta$  is the difference in degrees between the longitudes of the broadcasting-satellite space station in Region 2 and the broadcasting-satellite space station affected in Region 1 or 3.*

No Region 1 or 3 BSS assignment is within 19.1 degrees of USABSS-16 at 110° W.L. The closest Region 1 or 3 assignment is the French OCE10100 beam at 160° W.L., which is 50 degrees from 110° W.L. Therefore, the -106 dBW/m<sup>2</sup>/27 MHz level from the above limits applies.

The following table shows the pfd level calculated using the *minimum* isolation of USABSS-16's transmit beams to Regions 1 and 3 territories. The pfd limit is met with significant margin using the minimum isolation. Therefore, USABSS-16 is in compliance with Section 3.

Beam No.	EIRP, dBW	Minimum Isolation to R1 and R3 territory (antenna gain relative to peak)	PFD on Region 1/3 Territory (27 MHz)	PFD Limit in 27 MHz	Margin, dB
US16BS01	47.7	-10.0	-124.8	-106	18.8
US16BS02	46.6	-40.0	-155.9	-106	49.9
US16BS03	48.6	-40.0	-153.9	-106	47.9
US16BS04	53.2	-40.0	-149.3	-106	43.3
US16BS05	54.2	-40.0	-148.3	-106	42.3
US16BS06	53.2	-40.0	-149.3	-106	43.3
US16BS07	55.6	-40.0	-146.9	-106	40.9
US16BS08	53.5	-40.0	-149.0	-106	43.0
US16BS09	50.4	-40.0	-152.1	-106	46.1
US16BS10	52.3	-40.0	-150.2	-106	44.2
US16BS11	56.2	-40.0	-146.3	-106	40.3
US16BS12	54.6	-40.0	-147.9	-106	41.9
US16BS13	57.3	-40.0	-147.1	-106	41.1
US16BS14	57.3	-40.0	-145.2	-106	39.2
US16BS15	56.2	-40.0	-146.3	-106	40.3
US16BS16	54.7	-40.0	-147.8	-106	41.8
US16BS17	60.6	-40.0	-141.9	-106	35.9
US16BS18	61.0	-40.0	-141.5	-106	35.5
US16BS19	59.4	-40.0	-143.1	-106	37.1
US16BS20	51.5	-40.0	-151.0	-106	45.0
US16BS21	58.6	-40.0	-143.8	-106	37.8
US16BS22	60.1	-40.0	-142.4	-106	36.4
US16BS23	61.3	-40.0	-141.2	-106	35.2
US16BS24	64.2	-40.0	-138.3	-106	32.3
US16BS25	55.7	-40.0	-146.8	-106	40.8
US16BS26	59.5	-40.0	-143.0	-106	37.0
US16BS27	61.7	-40.0	-140.8	-106	34.8
US16BS28	61.9	-40.0	-140.6	-106	34.6
US16BS29	61.9	-40.0	-140.6	-106	34.6
US16BS30	60.4	-40.0	-142.1	-106	36.1
US16BS31	59.7	-40.0	-142.8	-106	36.8
US16BS32	61.3	-40.0	-141.2	-106	35.2
US16BS33	65.1	-40.0	-137.4	-106	31.4
US16BS34	64.8	-40.0	-137.7	-106	31.7
US16BS35	57.8	-40.0	-144.7	-106	38.7
US16BS36	61.0	-40.0	-141.5	-106	35.5
US16BS37	62.1	-40.0	-140.4	-106	34.4
US16BS38	65.2	-40.0	-137.3	-106	31.3

#### 4 Limits to the power flux-density to protect the terrestrial services of other administrations.

*The pfd limits for a Region 2 modification not to affect a Region 1, 2, or 3 terrestrial service are given below:*

$$\begin{array}{ll}
 -148 \text{ dB}(W/(m^2 \cdot 4 \text{ kHz})) & \text{for } \theta \leq 5^\circ \\
 -148 + 0.5 (\theta - 5) \text{ dB}(W/(m^2 \cdot 4 \text{ kHz})) & \text{for } 5^\circ < \theta \leq 25^\circ \\
 -138 \text{ dB}(W/(m^2 \cdot 4 \text{ kHz})) & \text{for } 25^\circ < \theta \leq 90^\circ
 \end{array}$$

*where  $\theta$  represents the angle of arrival.*

For territories of Regions 1 and 3 a similar analysis of the pfd levels in Section 3 was performed. As shown in the table, using minimum isolation to Regions 1 and 3 and the tightest pfd limit that could be applicable,  $-148 \text{ dB}(W/(m^2 \cdot 4 \text{ kHz}))$ , the pfd limit is met with significant margin.

Beam No.	EIRP, dBW	Minimum Isolation to R1 and R3 territory (antenna gain relative to peak)	PFD on Region 1/3 Territory (4 kHz)	PFD Limit in 4 kHz	Margin, dB
US16BS01	47.7	-10.0	-152.6	-148	14.6
US16BS02	46.6	-40.0	-153.7	-148	45.7
US16BS03	48.6	-40.0	-151.7	-148	43.7
US16BS04	53.2	-40.0	-147.1	-148	39.1
US16BS05	54.2	-40.0	-146.1	-148	38.1
US16BS06	53.2	-40.0	-147.1	-148	39.1
US16BS07	55.6	-40.0	-144.7	-148	36.7
US16BS08	53.5	-40.0	-146.8	-148	38.8
US16BS09	50.4	-40.0	-149.9	-148	41.9
US16BS10	52.3	-40.0	-148.0	-148	40.0
US16BS11	56.2	-40.0	-144.1	-148	36.1
US16BS12	54.6	-40.0	-145.7	-148	37.7
US16BS13	57.3	-40.0	-144.9	-148	36.9
US16BS14	57.3	-40.0	-143.0	-148	35.0
US16BS15	56.2	-40.0	-144.1	-148	36.1
US16BS16	54.7	-40.0	-145.6	-148	37.6
US16BS17	60.6	-40.0	-139.7	-148	31.7
US16BS18	61.0	-40.0	-139.3	-148	31.3
US16BS19	59.4	-40.0	-140.9	-148	32.9
US16BS20	51.5	-40.0	-148.8	-148	40.8
US16BS21	58.6	-40.0	-141.6	-148	33.6
US16BS22	60.1	-40.0	-140.2	-148	32.2

Beam No.	EIRP, dBW	Minimum Isolation to R1 and R3 territory (antenna gain relative to peak)	PFD on Region 1/3 Territory (4 kHz)	PFD Limit in 4 kHz	Margin, dB
US16BS23	61.3	-40.0	-139.0	-148	31.0
US16BS24	64.2	-40.0	-136.1	-148	28.1
US16BS25	55.7	-40.0	-144.6	-148	36.6
US16BS26	59.5	-40.0	-140.8	-148	32.8
US16BS27	61.7	-40.0	-138.6	-148	30.6
US16BS28	61.9	-40.0	-138.4	-148	30.4
US16BS29	61.9	-40.0	-138.4	-148	30.4
US16BS30	60.4	-40.0	-139.9	-148	31.9
US16BS31	59.7	-40.0	-140.6	-148	32.6
US16BS32	61.3	-40.0	-139.0	-148	31.0
US16BS33	65.1	-40.0	-135.2	-148	27.2
US16BS34	64.8	-40.0	-135.5	-148	27.5
US16BS35	57.8	-40.0	-142.5	-148	34.5
US16BS36	61.0	-40.0	-139.3	-148	31.3
US16BS37	62.1	-40.0	-138.2	-148	30.2
US16BS38	65.2	-40.0	-135.1	-148	27.1

Consistent with provision 4.2.3 d) of Article 4 of Appendix S30, these pfd limits apply to countries not having frequency assignment in the broadcasting-satellite service in the channel concerned. Since both Canada and Mexico, among other Region 2 countries, are assigned all 32 channels in the Plan, and therefore, will not be deploying terrestrial services, these limits do not need to be met on their territories.

For other Region 2 countries, analysis was performed using the ITU GIMS program. Figure 3-1 provides a plot of elevation angle contours for the 110° W.L. orbital location. For territories with arrival angles between 25 and 90 degrees, the worst case interference condition occurs with Beam US16BS34 and the Caribbean islands of Cuba and the Bahamas. Both countries are outside the -20 dB contour of US16BS34. The maximum pfd can then be calculated as follows:

Beam US16BS34 EIRP	64.8 dBW
PFD	-135.5 dB(W/m <sup>2</sup> · 4kHz)
Minimum Isolation	-20 dB
US16BS34 Maximum PFD on Cuba/Bahamas	-155.5 dB(W/m <sup>2</sup> · 4kHz)
PFD Limit	-138 dB(W/m <sup>2</sup> · 4kHz)
Margin	17.5 dB



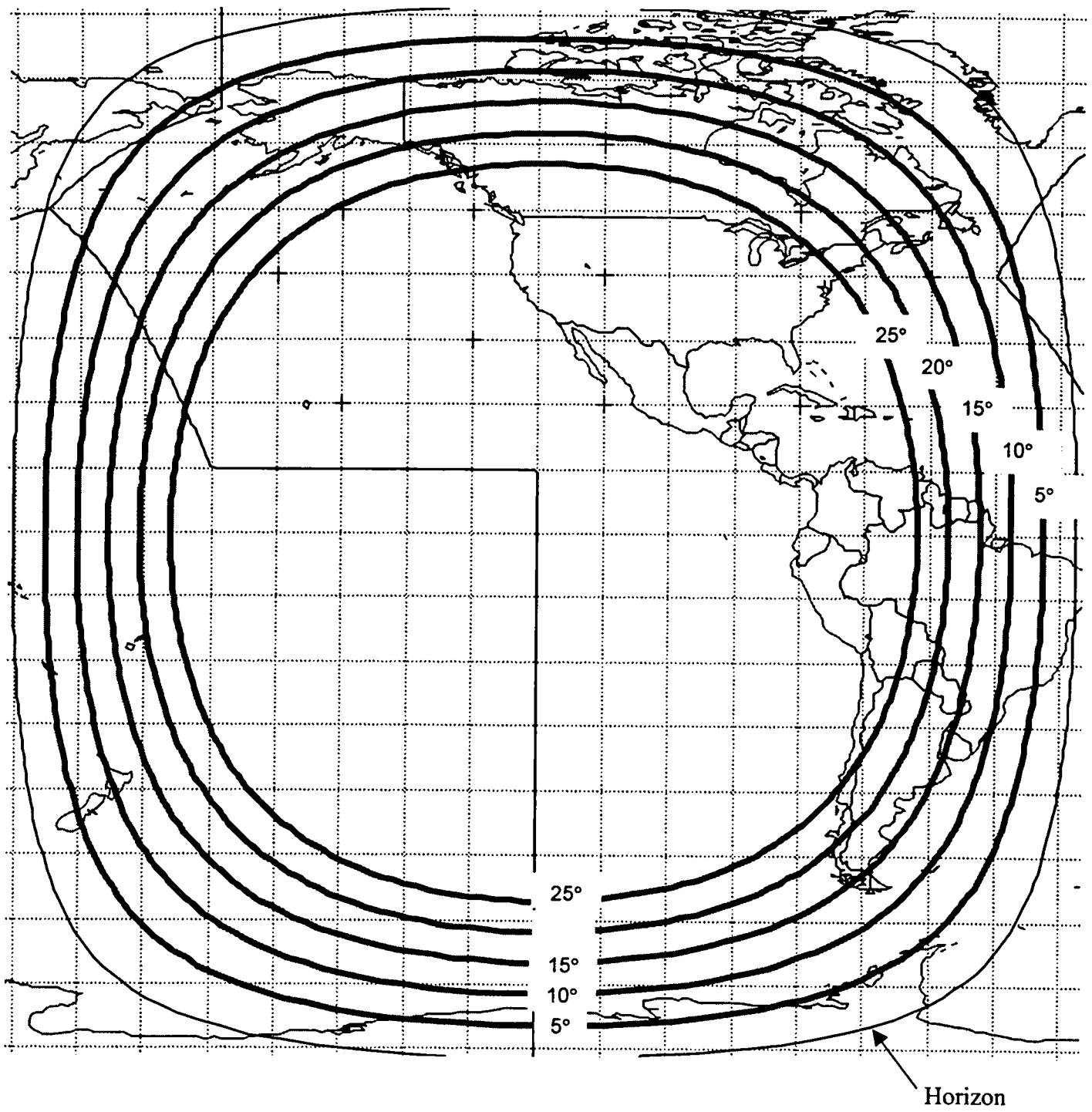
Since the worst case scenario for Region 2 countries with arrival angles to USABSS-16 between 25 and 90 degrees meets the PFD limits of Section 4, this limit is met for all other territories with arrival angles between 25 and 90 degrees.

All USABSS-16 beams have a minimum of 40 dB of isolation to all Region 2 territories with arrival angles to USABSS-16 between 5 and 25 degrees. Taking again the worst case scenario of a territory with a 5 degree elevation angle, and using the EIRP from beam US16BS33, the pfd on this territory can be calculated as follows:

Beam US16BS33 EIRP	65.1 dBW
PFD	-135.2 dB(W/m <sup>2</sup> · 4kHz)
Minimum Isolation	-40 dB
US16BS33 Maximum PFD on Cuba/Bahamas	-175.2 dB(W/m <sup>2</sup> · 4kHz)
PFD Limit	-148 dB(W/m <sup>2</sup> · 4kHz)
Margin	27.2 dB

Since none of the beams exceeds the appropriate pfd limit in any Region 2 country, USABSS-16 is in compliance with Section 4.

**Figure 3-1. Elevation Angle Contours for 110 Degrees W.L.**



**5 (Not used.)**

- 6 Limits to the change in the power flux-density of assignments in the Regions 1 and 3 Plan to protect the fixed-satellite service (space-to-Earth) in the band 11.7-12.2 GHz in Region 2 or in the band 12.2-12.5 GHz in Region 3, and of assignments in the Region 2 Plan to protect the fixed-satellite service (space-to-Earth) in the band 12.5-12.7 GHz in Region 1 and in the band 12.2-12.7 GHz in Region 3.**

The provisional limits that were adopted at WRC-00 are included in Resolution 540. The limits applicable to Region 2 BSS are reproduced below.

*For interference caused by Region 2 BSS to Regions 1 and 3 FSS (space-to-Earth in the band 12.5-12.7 GHz in Region 1 and in the band 12.2-12.7 GHz in Region 3):*

$-160 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	<i>for <math>0^\circ \leq \theta &lt; 0.054^\circ</math></i>
$-137.46 + 17.74 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	<i>for <math>0.054^\circ \leq \theta &lt; 3.67^\circ</math></i>
$-141.56 + 25 \log \theta \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	<i>for <math>3.67^\circ \leq \theta &lt; 11.54^\circ</math></i>
$-115 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$	<i>for <math>11.54^\circ \leq \theta</math></i>

*where  $\theta$  corresponds to the minimum geocentric angular separation between the interfering BSS and the interfered-with FSS space station. It is understood that, in the implementation of these criteria, the Bureau should take into account the pertinent station-keeping accuracy of the BSS and FSS space stations as filed by the notifying administrations.*

NOTE – In addition, the 0.25 dB allowed increase over the pfd resulting from the original Plan assignments of all Regions should be maintained.

All Regions 1 and 3 FSS satellites are greater than  $11.54^\circ$  from the  $110^\circ$  W orbit location. Therefore, the  $-115 \text{ dB(W/(m}^2 \cdot 27 \text{ MHz))}$  level from the above limits applies. As shown in the table in response to Section 3, the pfd limit per 27 MHz in Regions 1 and 3 is less than this level. Therefore, USABSS-16 is in compliance with this section.

- 7 Limits to the change in equivalent noise temperature to protect the fixed-satellite service (Earth-to-space) in Region 1 from modifications to the Region 2 Plan in the band 12.5-12.7 GHz**

In order for a Region 2 modification not to affect FSS in Region 1, the  $\Delta T/T$  resulting from the modification must be less than 4%, or less than the  $\Delta T/T$  resulting from the assignment in the Region 2 Plan.

After review of available ITU space network databases, no assignments in the Earth-to-space direction in the 12.5-12.7 GHz band were found. Therefore, no Region 1 space station is affected and USABSS-16 is in compliance with Paragraph 7.

## **APPENDIX 4**

### **ANNEX 1 TO APPENDIX S30A**

#### **USABSS-16**

**LIMITS FOR DETERMINING WHETHER A SERVICE OF AN ADMINISTRATION IS  
CONSIDERED TO BE AFFECTED BY A PROPOSED MODIFICATION TO ONE OF  
THE REGIONAL PLANS OR WHEN IT IS NECESSARY UNDER THIS APPENDIX TO  
SEEK THE AGREEMENT OF ANY OTHER ADMINISTRATION**

## ANNEX 1 OF APPENDIX S30A FOR USABSS-16

**1 Not Used.**

**2 Not Used.**

**3 Limits to the change in the overall equivalent protection margin with respect to frequency assignments in conformity with the Region 2 feeder-link Plan**

A detailed interference analysis will be performed using MSPACE to determine which administrations, if any, are affected. Coordination will be performed if required.

**4 Limits to the interference into frequency assignments in conformity with the Regions 1 and 3 feeder-link Plan or with the Regions 1 and 3 feeder-link Lists or proposed new or modified assignments in the Regions 1 and 3 feeder-link Lists**

Not Applicable for Region 2 Modifications

**5 *Limits applicable to protect a frequency assignment in the bands 17.3-18.1 GHz (Regions 1 and 3) and 17.3-17.8 GHz (Region 2) to a receiving space station in the fixed-satellite service (Earth-to-space)***

The closest Region 1 or 3 BSS assignment to USABSS-16 at 110° W.L. is OCE10100 at 160° W.L. This network is 50 degrees from 110° W.L. No other Region 1 or 3 assignment is closer than 68 degrees. A  $\Delta T/T$  calculation was made for OCE10100 in accordance with the method given in Appendix S8. It is reasonable to assume that space networks further away from 110° W.L., and with similar elliptical receive beams as OCE10100, will incur less increase in noise temperature than OCE10100, and therefore, the  $\Delta T/T$  calculation is performed only for OCE10100.

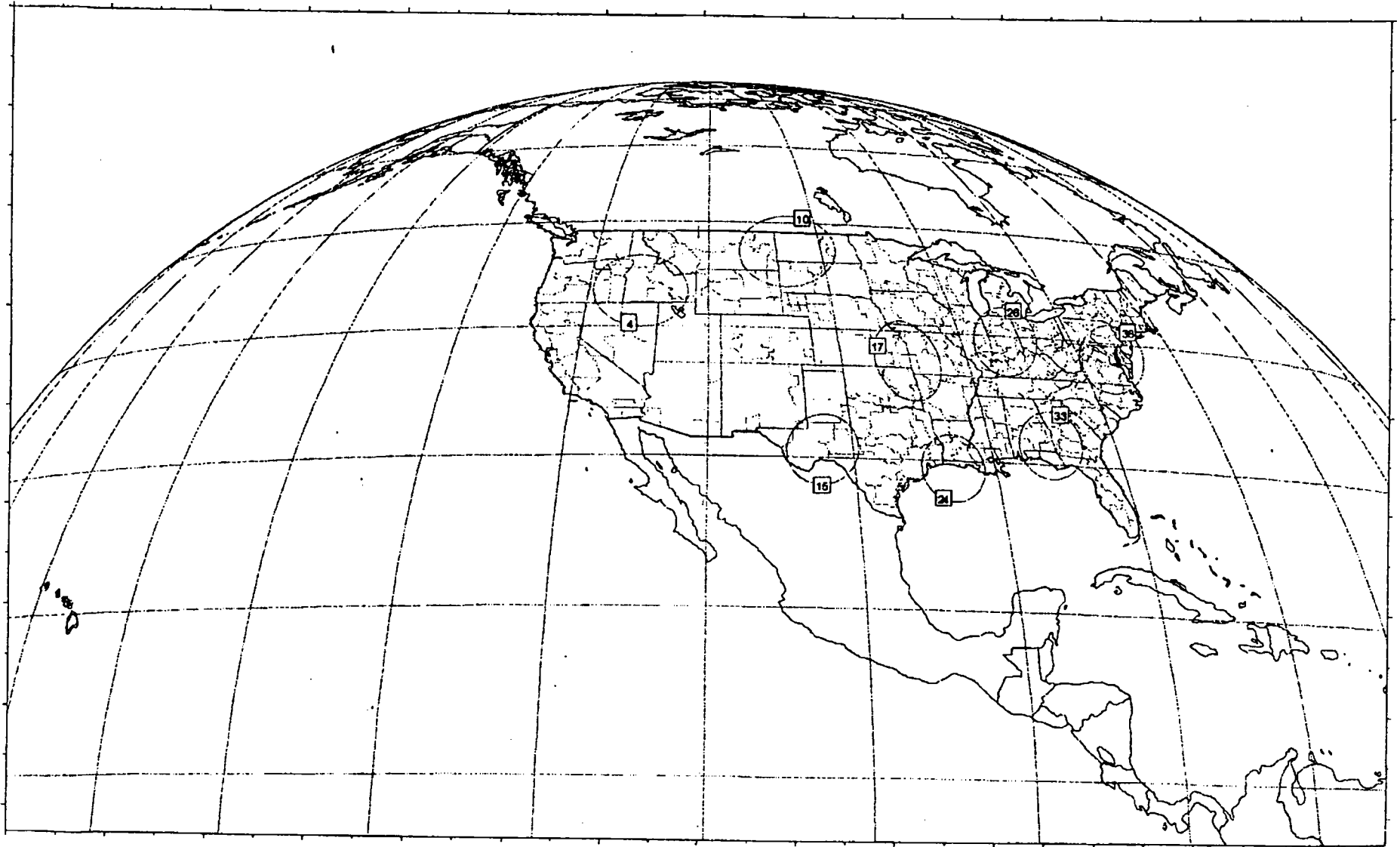
Beam	OCE10100
Frequency	17.5 GHz
Bandwidth	27 MHz
Orbital Position	160° W.L.
Degrees from USABSS-16	50
Receive Beam	MODRSS
Receive Antenna Gain	32.58 dB
Receive Antenna Gain Towards USABSS-16 Feeder-link	0 dB
Receive Noise Temp.	900° K
USABSS-16 Earth Station EIRP	76 dBW
Off-axis Antenna Discrimination	70 dB
Delta T/T	0.10%

The results show that the resulting  $\Delta T/T$  is well below the specified criterion of 3%. Therefore, USABSS-16 is in compliance with Section 5.

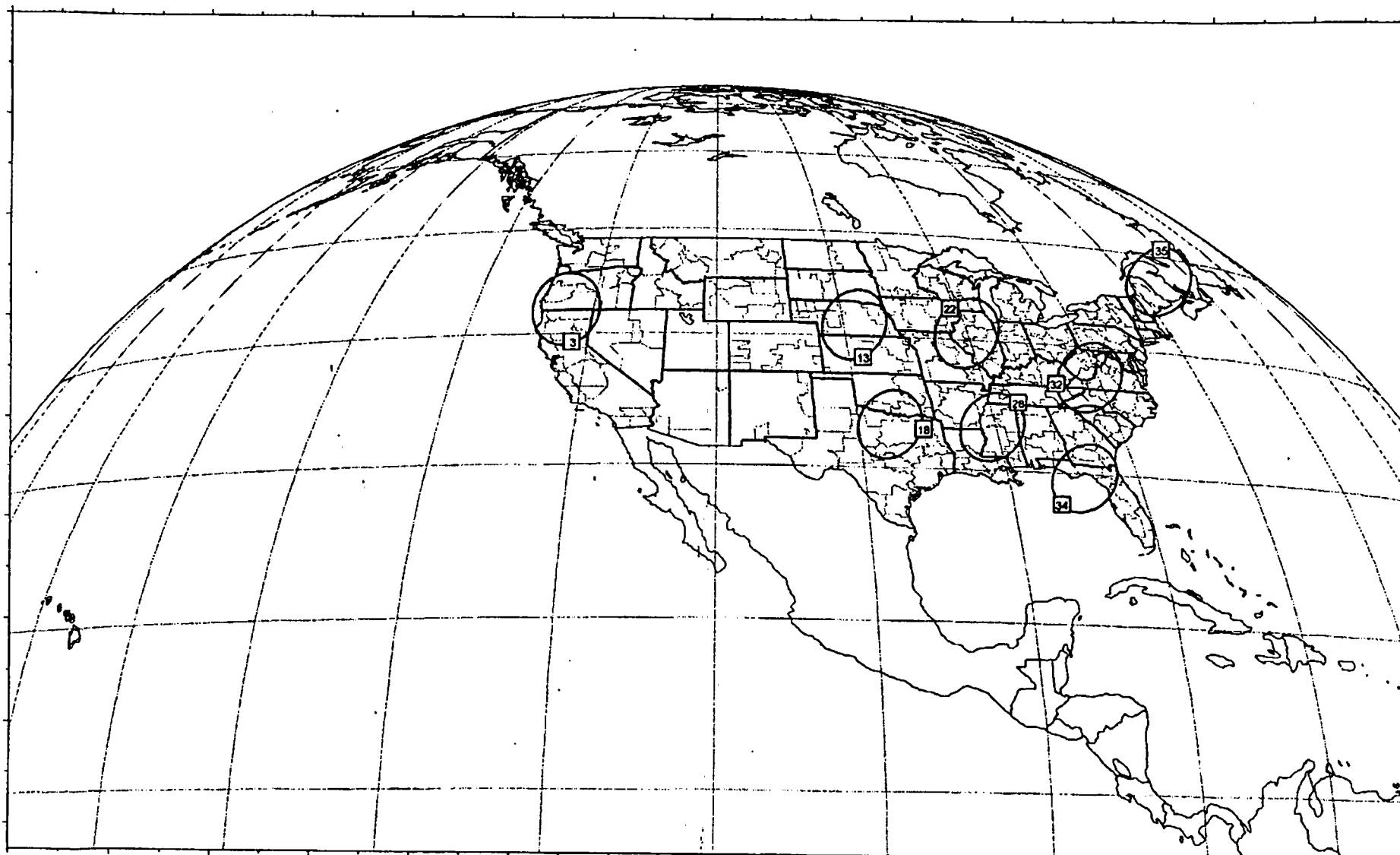
**6 *Limits applicable to protect a frequency assignment in the band 17.8-18.1 GHz (Region 2) to a receiving feeder-link space station in the fixed-satellite service (Earth-to-space)***

Not Applicable for Region 2 Modifications

Beams 4, 10, 15, 17, 24, 26, 33, 36

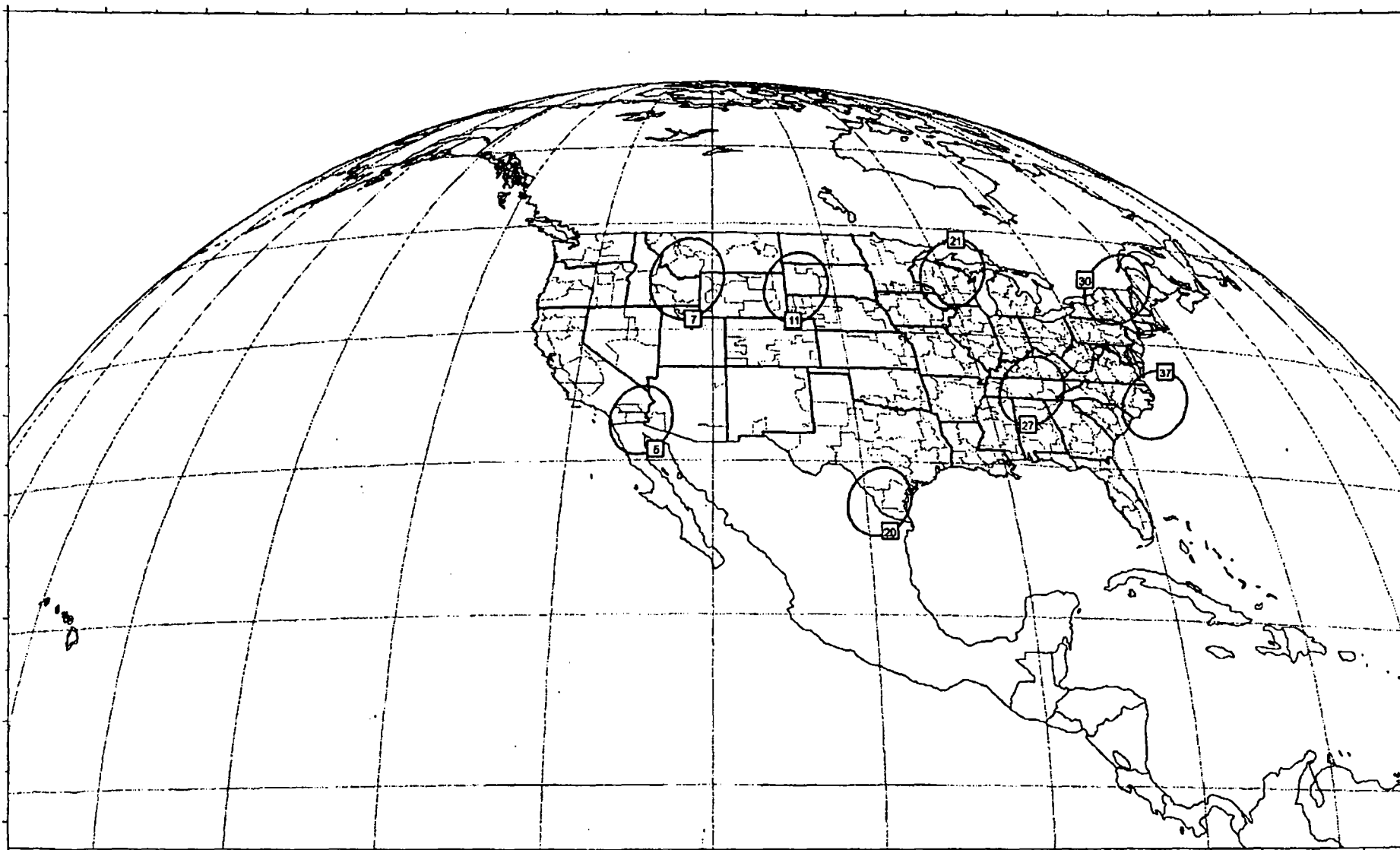


Beams 3, 13, 18, 22, 28, 32, 34, 35

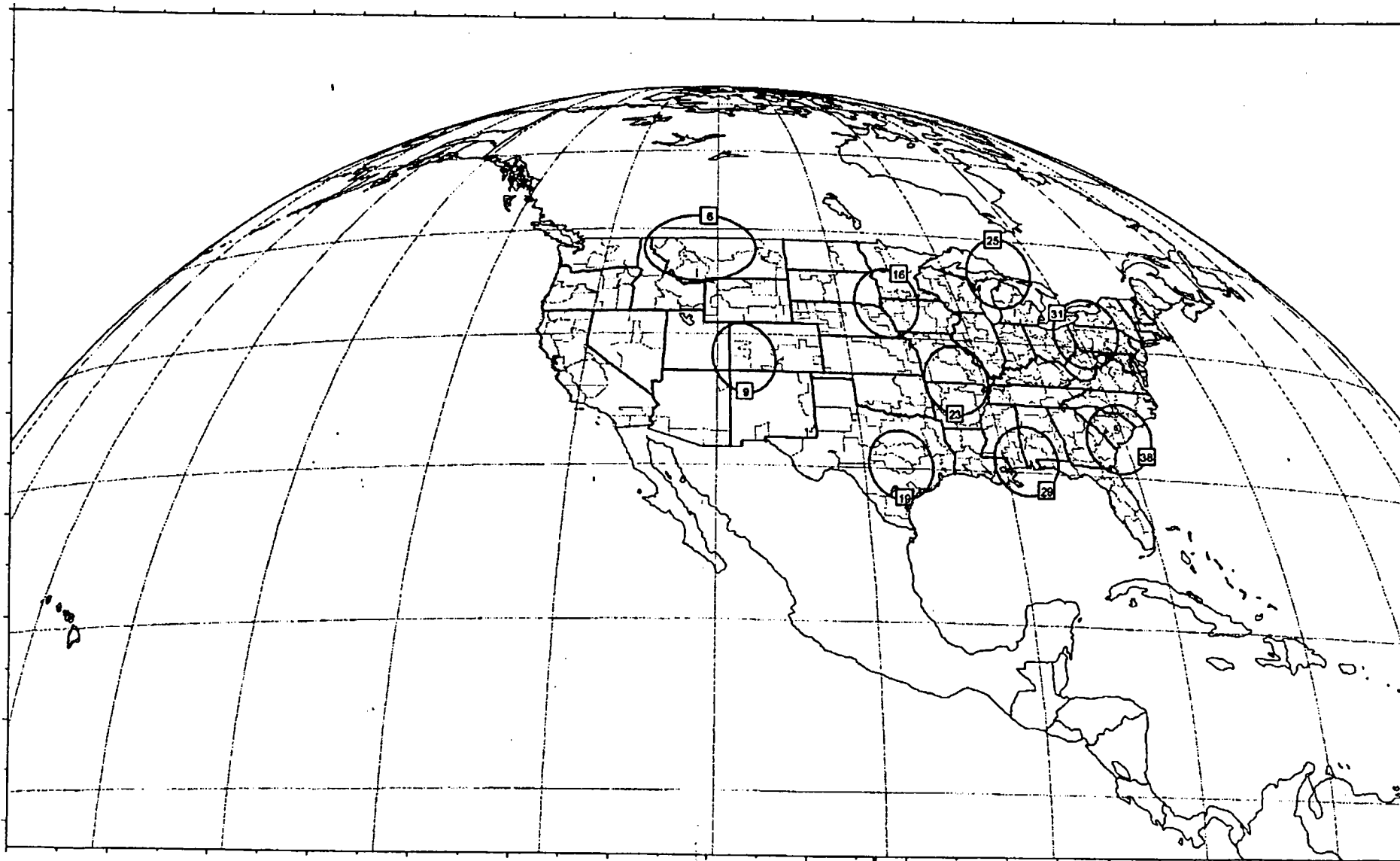




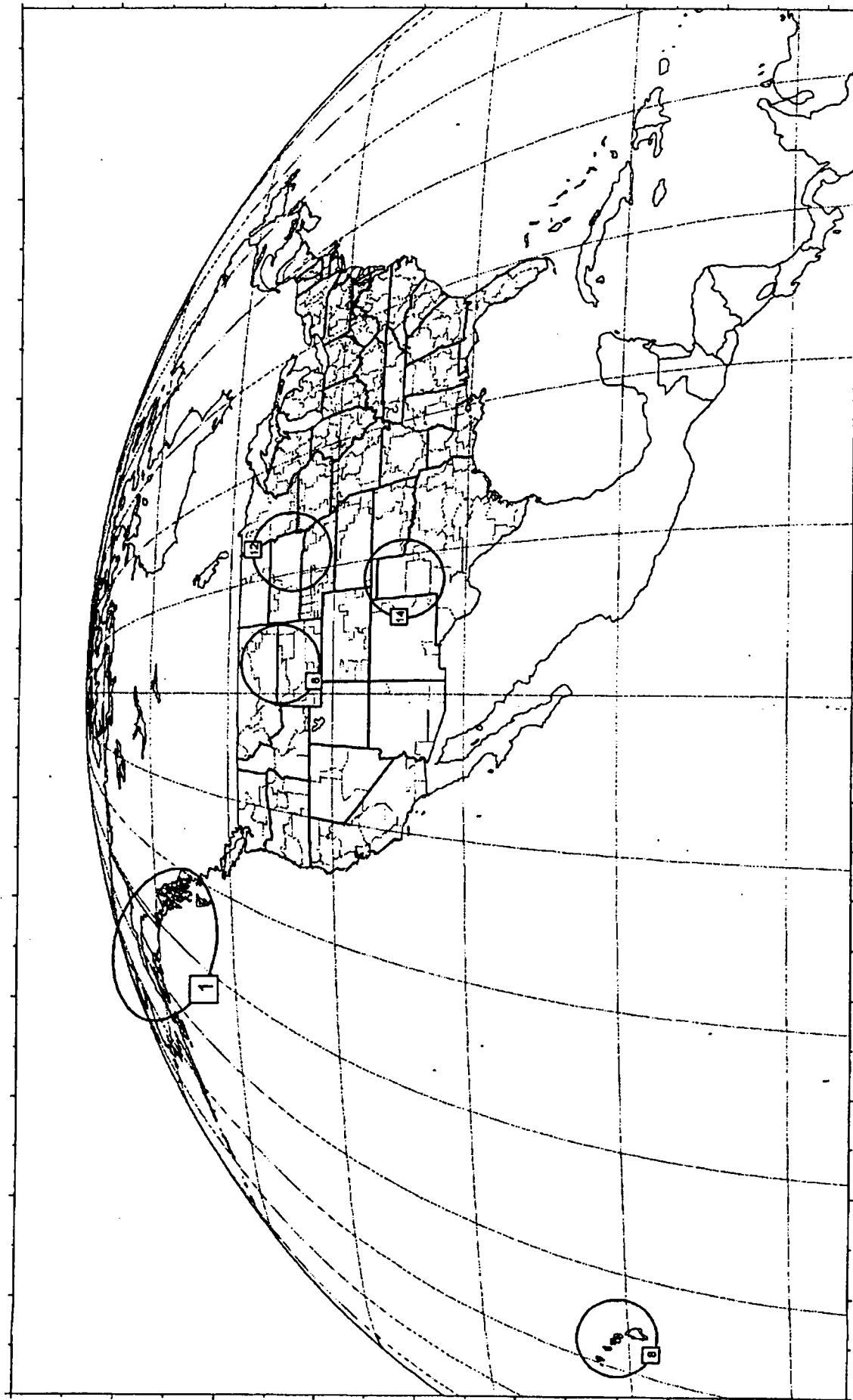
Beams 5, 7, 11, 20, 21, 27, 30, 37



Beams 6, 9, 16, 19, 23, 25, 29, 31, 38




Beams 1, 2, 8, 12, 14



**CERTIFICATION OF PERSON RESPONSIBLE**  
**FOR PREPARING ENGINEERING INFORMATION**

I hereby declare under penalty of perjury that I am the technically qualified person responsible for preparation of the engineering information contained in the foregoing submission, that I am familiar with Parts 25 and 100 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this pleading, and that it is true and correct to the best of my knowledge and belief.

A handwritten signature in black ink, appearing to read 'David A. Patillo', is written over a horizontal line.

David A. Patillo  
Sr. Manager, Communications Systems  
DIRECTV, Inc.

Date: May 29, 2002

**CERTIFICATION OF PERSON RESPONSIBLE**  
**FOR PREPARING ENGINEERING INFORMATION**

I hereby declare under penalty of perjury that I am the technically qualified person responsible for preparation of the engineering information contained in the foregoing submission, that I am familiar with Parts 25 and 100 of the Commission's rules, that I have either prepared or reviewed the engineering information submitted in this pleading, and that it is true and correct to the best of my knowledge and belief.

  
\_\_\_\_\_

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Chevy Chase, Maryland 20815  
(301) 656-8969

Date: May 29, 2002